PSYCHOLOGICAL FACTORS IN THE USE OF MUSIC THERAPY WITH INDIVIDUALS EXPERIENCING PAIN: A SURVEY OF CURRENT PRACTICE

A Thesis
by
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Abstract

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This study examined how music therapists consider psychological factors when working with individuals experiencing acute pain and individuals experiencing chronic pain. It is estimated that hundreds of millions of Americans experience pain (Gaskin & Richard, 2012). Since psychological factors such as anxiety and depression can increase the perception of acute pain, integrative therapies, such as music therapy, that address these factors are increasingly needed. This study utilized a mixed methods design to examine how music therapists address psychological factors when working with individuals experiencing acute and chronic pain. The researcher constructed and distributed a survey to 489 music therapists who were board-certified and working in settings likely to include individuals experiencing pain. Sixty-eight music therapists responded to the questionnaire. From those participants, three music therapists volunteered to participate in a semi-structured interview with the researcher to share their thoughts and expertise about the topic. Results of the study suggested that music therapists address psychological factors

such as trait anxiety and depression prior to an acute pain event or during chronic pain; results further suggested that music therapists tended to prioritize trait anxiety when working with individuals experiencing acute pain. The results of the study demonstrated a need for music therapists to continue to address depression and trait anxiety at all stages of the pain process.

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Chapter 1

Introduction

Pain is a universal human experience rooted in evolutionary defense mechanisms. While pain can provide protective reactions from dangerous stimuli, untreated or undertreated pain can have severe effects on an individual's ability to perform activities of daily living as well as an individual's emotional, cognitive, spiritual, physiological health (Gatchel, Peng, Peters, Fuchs, & Turk, 2007; International Association for the Study of Pain, 2012; Karoly & Ruehlman, 2007; Peters, Vlaeyen, & Weber, 2005). Furthermore, opioid medications, the current standard of treatment for pain, are subject to patient misuse and abuse (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, 2011). The prevalence and economic costs of pain have made goals pertaining to the effective treatment of acute pain, the minimization of the probability of chronic pain developing, and the effectual treatment of chronic pain focal points of pain research (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, 2011; National Institutes of Health Interagency Pain Research Coordinating Committee, 2016).

Both acute pain and chronic pain are pervasive issues in America. A 2012 study estimated that 126.1 million adults in America reported some pain in the preceding three months (Gaskin & Richard, 2012). Estimates suggested that approximately 80% of patients experience acute pain following surgery, with 86% of these patients experiencing moderate, severe, or extreme pain, even after discharge (Apfelbaum, Chen, Mehta, & Gan, 2003). Acute pain is one of the most common reasons for postsurgical hospital readmission, accounting for approximately one-third of return visits to hospitals and incurring significant costs (Coley, Williams, DaPos, Chen, & Smith, 2002; Sinatra, 2010). Furthermore, the

intensity of acute postoperative pain correlates with risk of developing chronic pain (Kehlet, Jensen, & Woolf, 2006; Macrae, 2001; Voscopoulos & Lema, 2010). Conversely, decreasing the severity of acute pain can decrease the risk of developing chronic pain (Callesen, Bech, & Kehlet, 1999; Hanley et al., 2007; Tasmuth, Kataja, Blomqvist, von Smitten, & Kalso, 1997; Yarnitsky et al., 2008).

The risk of developing chronic pain can also be decreased by addressing anxiety and depression prior to an acute pain event or while an individual is experiencing acute pain (Gerrits, van Marwik, van Oppen, van der Horst, & Pennix, 2015; Hurwitz, Morgenstern, & Yu, 2003; Kroenke et al., 2011). Pain, depression, and anxiety have reciprocal effects on each other; that is, when one increases, the other tends to increase as well (Hurwitz, Morgenstern, & Yu, 2003; Kroenke et al., 2011). Consequently, the risk of developing chronic pain tends to be higher in individuals who have a history of depression, anxiety, or both depression and anxiety (Gerrits et al., 2015).

Chronic pain affects an estimated 11.2% of American adults, or 25.3 million people, and that number is expected to increase as individuals live longer and the rates of obesity increase (National Institute of Diabetes and Digestive and Kidney Diseases Weight-control Information Network, 2012; Nahin, 2015). In addition to decreased quality of life, individuals with chronic pain may miss school or work days and may require economic support due to lost wages; therefore, chronic pain is one of the leading causes of disability in America (National Institutes of Health Interagency Pain Research Coordinating Committee, 2016). Taking into account health care costs and lost productivity, the economic cost of pain is estimated to range from $261 to $300 billion.

Current standard of care for acute and chronic pain usually consists of anxiolytic drugs and opioid analgesics; however, recent research has found that these medications are not as safe and efficacious as previously believed (Bot, Bekkers, Arnstein, Smith, & Ring, 2014). For example, a lack of correlation between opioid dose adjustment and pain score change has been found in chronic pain patients (Chen et al., 2013). Additionally, side effects of opioid consumption include dizziness, nausea, vomiting, constipation, physical dependence, tolerance, and respiratory depression (Benyamin et al., 2008). A recent increase in opioid consumption has also lead to a significant rise in the misuse, addiction, and overdose deaths of individuals taking opioids (National Institutes of Health, 2016).

Due to the economic costs and personal consequences caused by acute and chronic pain, efficacious pain treatment and management has become a focal point for many government agencies and research groups, including the Institute of Medicine and the National Institutes of Health. These agencies place an emphasis upon preventing the transition from acute to chronic pain, treating pain more effectively and cost-effectively, and preventing psychological conditions associated with pain, such as depression and anxiety (Institute of Medicine, 2011). Additionally, the National Institutes of Health (NIH)'s Interagency Pain Research Coordinating Committee (IRPCC)'s pain strategy, released in 2016, included the following goals:

- Clinicians would take active measures to prevent the progression of acute to chronic pain and its associated disabilities…
- People with all levels of pain would… [learn] effective approaches for self-care and pain self-management programs to prevent, cope with, and reduce pain and its disability…
- Clinician's knowledge would be broadened to encompass an understanding of… ways to encourage pain self-management…, how clinician empathy and cultural sensitivity influence the effectiveness of care, and the role of complementary and integrative medicine (NIH IPRCC, 2016, pp. 5-6)

Given the NIH goals, there is a need for individualized complementary and alternative approaches to pain that address the multidimensional nature of pain and the psychological factors associated with perception of pain and the development of chronic pain. One such approach is music therapy, a complementary evidence-based practice that has gained interest in recent years because of its ability to provide personalized, client-centered care that focuses on client biopsychosocial needs, fosters client self-efficacy, and provides efficacious nonpharmacological management of pain symptoms to individuals with both acute and chronic pain (Allen, 2013). In addition to individuals experiencing pain, music therapy has also been used with individuals with depression and anxiety and has demonstrated positive results in addressing individuals' mental health needs (Bryant, 1987; Hilliard, 2001; Luce, 2001; Silverman & Marcionetti, 2004; Silverman, 2007). Thus, the goals and outcomes of music therapy with individuals with pain align closely with the goals and outcomes desired by the National Institutes of Health and the Institute of Medicine. By addressing psychological factors such as anxiety and depression when working with individuals experiencing pain, music therapy has the potential to become one of the complementary therapies discussed by the NIH.

Definitions of Terms

Music Therapy

According to the American Music Therapy Association, music therapy is "the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program" (American Music Therapy Association, 2013, paragraph 1). It is a reflexive process during which the music therapist continually observes and responds to the

client using musical interventions to assist the client in achieving his or her mental, emotional, social, spiritual, or physical goals (Bruscia, 2014). A wide variety of populations use and benefit from music therapy, including infants in a neonatal intensive care unit, children with developmental disorders, adolescents with emotional and behavioral disorders, and adults with Alzheimer's disease, and individuals with chronic and acute pain (AMTA, 2013).

An individual who has a bachelor's degree or higher in music therapy from an AMTA-approved college and university can practice music therapy (AMTA, 2013). This includes at least 1,200 hours of supervised clinical training (AMTA, 2013). Additionally, a music therapist must hold the credential Music Therapist – Board Certified (MT-BC), granted by the Certification Board for Music Therapists (CBMT). The Board grants this credential after an individual has completed the necessary curricular and clinical requirements and demonstrates professional competency in music therapy knowledge, techniques, and skill (CBMT, n.d.).

Some people provide music to other individuals with mental, emotional, social, spiritual, or physical needs; however, if the person does not have a bachelor's degree or higher from an AMTA-approved university and does not hold the MT-BC credential, he or she is not practicing music therapy. While the use of music to help others is notable, music therapy is research-based and requires that the practitioner have an in-depth understanding of psychology, music, and medicine (AMTA, 2013). Thus, the following are not clinical music therapy: an individual in a nursing home listening to music from his young adulthood on an iPod; an individual playing music for someone in the hospital; medical staff playing music in

the background for patients; and groups such as Bedside Musicians, Music Practitioners, Sound Healers, and Music Thanatologists (AMTA, 2013).

Pain

For the purposes of this study, the definition of pain is taken from the International Association for the Study of Pain (IASP), defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (2012, paragraph 1). There are several types of pain, including procedural pain, acute pain, and chronic pain. This study will focus on acute pain and chronic pain.

Acute pain. NIH's IPRCC defines acute pain as "an expected physiologic experience to noxious stimuli that can become pathologic, is normally sudden in onset, time limited, and motivates behaviors to avoid actual or potential tissue injuries" (National Institutes of Health Interagency Pain Research Coordinating Committee, 2016). Trauma involving tissue damage typically precedes acute pain, and the pain is resolved while the injury heals (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, 2011).

Acute pain serves a useful biologic purpose in that it provides the body with a warning to remove itself from a situation that is damaging body tissue (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, 2011). Acute pain also forces the body to rest and heal the tissue that has been damaged in the trauma preceding the pain (Grichnik & Ferrante, 1991).

Chronic pain. For the purposes of this study, chronic pain is defined as persistent pain that lasts longer than three to six months and does not serve an evolutionary purpose with levels of pathology that inadequately explain the pain (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, Board on Health Sciences Policy, 2011;

Markenson, 1996). Chronic pain may be the result of an initial event occurring, such as a sprained back; a chronic disorder that causes pain, such as arthritis; or pain with no physical etiology (National Institute of Neurological Disorders and Stroke, 2014). Chronic pain can also be classified as neuropathic, meaning that the pain is due to a somatosensorial system dysfunction; nociceptive, meaning that the pain is due to ongoing tissue injury; or a mixture of both (Allen, 2013; Montero-Homs, 2009).

It is important to recognize that pain is a subjective experience. There is no medical test that can specify how much pain an individual is experiencing in the moment. While objective observations, such as muscle tension or physiological responses, may be utilized to make an estimate of how much pain an individual experiences, the most precise way of measuring pain is by self-report (Allen, 2013). Emphasizing this subjective experience, McCaffery (1968) defined pain as "whatever the experiencing person says it is, existing whenever the experiencing person says it does" (p. 95). Thus, everyone's pain experience is unique and subjective.

Depression

For the purposes of this study, the definition of depression is taken from the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) and is defined as a mood disorder characterized by depressed mood or loss of interest or pleasure that lasts two weeks or longer (American Psychiatric Association, 2013). In addition to depressed mood and loss of interest or pleasure, other symptoms of depression may include significant weight or appetite change, "insomnia or hypersomnia…, psychomotor agitation or retardation…, fatigue or loss of energy…, feelings

of worthlessness…, diminished ability to think or concentrate…, and recurrent thoughts of death" (American Psychiatric Association, 2013, pp. 160-161).

Anxiety

For the purposes of this study, the definition of anxiety is taken from the American Psychological Association and is defined as, "an emotion characterized by feelings of tension, worried thoughts and physical changes" (American Psychological Association, 2017). As described in the *DSM*-5, specific symptoms of anxiety may include, "feeling… on edge" or restless, "being easily fatigued, difficulty concentrating…, irritability, muscle tension, or sleep disturbance" (American Psychiatric Association, 2013, p. 222). There are two subtypes of anxiety, state anxiety and trait anxiety. This study notes the importance of distinguishing between the two subtypes.

State anxiety. This study will assume the definition of state anxiety as "a transient level of arousal associated with reactions to adverse stimuli" (Morales, 2012, p. viii). Thus, state anxiety is the fluctuating condition that is the result of something. The stimuli that causes state anxiety can include an acute pain event, as it will be in this study. State anxiety is not the normal state of an individual; it is the reaction to something.

Trait anxiety. This study will assume the definition of trait anxiety as "an individual dispositional level of anxiety that is not reactive to external stimuli," that is "reflected in relatively stable differences in underlying neurochemical systems, heritable, and stable across the life course" (Morales, 2012, p. viii). Whereas state anxiety is a reaction to something and can change frequently, trait anxiety is a more constant aspect of an individual's personality that affects the way they interact with and exist in the world.

Chapter 2

Literature Review

To determine an efficacious treatment or management of pain, it is important to understand the physiology of pain itself. As Jacques (1994) described, nociceptors are a part of the nerve cell that respond to injury or noxious stimuli by firing an electrical impulse. This impulse reaches the brain along several pathways, but the spinothalamic pathway is the best understood. In the spinothalamic pathway, the nociceptors convey the pain impulse to the posterior horn of spinal cord. This pain impulse activates cell layers including the substantia gelatinosa of Rolando. These layers carry the impulse to the thalamus, where the pain is recognized, then to the cerebral cortex where it is analyzed to identify the source and severity of the pain. Thus, while the peripheral nervous system identifies stimuli, it is the central nervous system that interprets the stimuli and creates the perception of pain.

Another way to understand the physiology of pain is to consider a fictional fantasy kingdom, which will stand for the whole of the body. When something threatening happens in one part of the kingdom, a scout, or the nociceptor, writes a message to the ruler of the kingdom, ties it to a carrier pigeon's leg, and sends it to the castle, or the central nervous system. The royal pigeon handler, the thalamus, sees the pigeon and brings it to the ruler. The ruler then reads the message and makes a determination how to react based on the interpretation of message. Without the ruler to read and interpret the message, the message would remain unread. Again, this demonstrates how the peripheral nervous system detects the pain, but it is the central nervous system that derives meaning from it, including the feeling of pain.

Overview of Pain

Acute and Chronic Pain

The primary characteristic of acute pain is prominent peripheral nervous system functioning and typically occurs when an individual displays tissue injury or inflammation, such as after surgery (Zeller, 2008). During this time, the body undergoes a surge of events to fight infection, limit further damage, and initiate repair (Phillips & Clauw, 2011; Voscopoulos, & Lema, 2010). Nocioceptors respond to injury or noxious stimuli by firing an electrical impulse and carrying that impulse through the pathway previously described (Jacques, 1994). Simultaneously, the release of pro-inflammatory cytokines, chemokines, and neurotrophins in both the peripheral and central nervous system heighten pain awareness as an evolutionary mechanism to avoid further injury (Voscopoulos & Lema, 2010). Normally, as the healing process proceeds, the noxious stimuli decrease and the pain sensation lessens until the individual detects minimal or no pain (Voscopoulos & Lema, 2010).

Returning to the fictional kingdom, with acute pain, something threatening happens in the kingdom; the tissue of the kingdom is damaged. The carrier pigeon relaying the message of the damage is sent to the castle. Noting the damage, as the pigeon is carrying the message to the castle, villagers, paladins, rangers, and warriors rise up to both protect the kingdom from sustaining further damage and to help the kingdom recover from the damage sustained. As the damage lessens, the activity of the villagers, paladins, rangers, and warriors decreases, as do the frequency of updates delivered to the ruler via pigeon.

Chronic pain occurs after acute pain, and while it, too, is uncomfortable, it is different than acute pain. In contrast to the relatively short-term effects of acute pain, chronic pain is

persistent pain that lasts longer than three to six months (Institute of Medicine Committee on Advancing Pain Research, Care, and Education, 2011). Acute pain serves an evolutionary purpose, whereas chronic pain does not (Markenson, 1996). While prominent peripheral nervous system functioning is characteristic of acute pain, prominent central nervous system functioning is characteristic of chronic pain (Phillips & Clauw, 2011). When an individual has chronic pain, pain signals continue to fire and which the brain continuously interprets as pain (Phillips & Clauw, 2011). Reasons for an individual experiencing chronic pain may vary from an initial event occurring, such as a sprained back; a chronic disorder that causes pain, such as arthritis; or pain with no physical etiology (National Institute of Neurological Disorders and Stroke, 2014).

Once more returning to the metaphor of the fictional kingdom, chronic pain consists of the ruler of the kingdom constantly receiving pigeons and interpreting their message as threatening, even when the message is not threatening, or even when there are no pigeons at all. The kingdom itself may be functioning, and there may be no scout actually sending the pigeons; however, the ruler's interpretation of threat and damage feels just as real as when parts of the kingdom were actually damaged.

Pain as a Multidimensional Experience

While the tissue damage component of pain perception receives much of the attention, emotions and cognitions also affect pain perception, making it a multidimensional experience. Psychological factors affecting the interpretation and intensity of pain include anxiety and coping strategies (Bot et al., 2014; Ip, Abrishami, Peng, Wong, & Chung, 2009; Joelsson, Olsson, & Jakobsson, 2010; Radinovic et al., 2014; Rhudy & Meagher, 2000). Research has shown anxiety to have a sensitizing effect on pain reactivity in humans (Rhudy

& Meagher, 2000). Furthermore, attributional theory suggests that the anxiety or fear is related to the pain itself due to anxiety having an effect activating the entorhinal cortex of the hippocampi formation enhances the pain (Ploghaus, et al., 2001; Weisenberg, Aviram, Wolf, & Raphaeli, 1984). Consequently, anxiety tends to increase the perception of pain, especially when the anxiety is related to the pain itself.

Melzack and Wall's gate control theory of pain (1965) hypothesized how emotions and thoughts, including anxiety, influence pain. The gate control theory of pain posits that pain impulses arrive at a gate. Researchers theorize that this gate may be the substantia gelatinosa of Rolando. When the gate is open, pain impulses pass through easily and consequently activate the thalamic pain receptors in the brain. When the gate is partially open, only some pain impulses can pass, and when the gate is closed, no pain impulses are able to pass. Melzack and Wall (1965) also discussed the role of the hypothalamus in association with the concept of mind over matter. This was significant because it indicated that thoughts and emotions could open or close the gate.

Melzack further developed the gate control theory in 1999 when he proposed the neuromatrix theory of pain. While the gate control theory of pain was significant in that it emphasized the role of the central nervous system in filtering and interpreting stimuli, Melzack's (1999) body-self neuromatrix theory sought to further explain how multiple inputs, including emotions and thoughts, produce the sensation of pain. Melzack (1999) proposed a neural network of different parts of the brain that takes in sensory, affective, and cognitive information relating to the pain and situation, interprets the cyclical interaction of the sensory, affective, and cognitive areas, and creates an output of a multidimensional pain response including pain perception, how the individual acts and reacts to the pain, and the

body's stress-regulation programs. Since every person has different genetic makeup, everyone's body-self neuromatrix is different. Consequently, each individual's experience of pain is also different, represented in the name of the output from the body-self neuromatrix: the neurosignature, different to each person just as each person's autograph is different (Melzack, 2005; Melzack, 1999).

Catastrophizing pain, a form of anxiety and a coping strategy consisting of the belief that experienced pain is awful, horrible, and unbearable, tends to increase the perception of pain, possibly due to the interaction in the body-self neuromatrix (Gracely et al., 2004; Pavlin, Sullivan, Freund, & Roesen, 2005). Additionally, studies have associated lower patient self-efficacy related to pain management, defined as the patient's coping strategies and confidence in his or her ability to manage his or her pain, with decreased satisfaction with pain management in postsurgical patients (Bot et al., 2014). Therefore, if an individual has catastrophizing thoughts and low self-efficacy, that individual's perception of pain will be greater than that of someone without catastrophizing thoughts and high self-efficacy.

Similarly, during situations when individuals experience pain, psychological factors, such as anxiety, can influence their pain perception. Anxiety, including pain catastrophization and the individual doubting his or her ability to handle the pain, can increase an individual's perception of pain (Allen, 2013; American Psychological Association, 2014; Bernatzky, Strickner, Presch, Wendtner, & Kullich, 2012; National Institute of Mental Health, 2014). The increased perception of pain can then become a physiological stressor, causing tension, which may cause more pain. This cycle is called the pain-stress-pain cycle (Spintge, 2012).

The fear-avoidance model is similar to the pain-stress-pain cycle in that it posits that cognitions affect the way individuals perceive pain, but instead of having a physiological reaction to the pain, the individuals avoid movement and activity because they are afraid that pain will follow (Vlaeyen & Linton, 2000). Avoidance can be adaptive when the pain is acute and tissue damage is healing; however, it is not adaptive when the pain is chronic. The avoidance of movement and activity leads to the individual not using his or her muscles, which can then result in physical deconditioning and impairment of muscle coordination (Main & Watson, 1996; Vlaeyen & Linton, 2000; Wagenmakers, Coakley, & Edwards, 1988). Thus, when the individual does move, he or she experiences pain from that physical deconditioning and impairment of muscle coordination. This leads to further avoidance, creating a cycle of avoidance behaviors and poor treatment outcomes (Wertli et al., 2014). An individual's fear-avoidance behaviors related to pain can have a variety of negative consequences including impaired physical functioning, increased negative mood, and increased levels of disability (Zale & Ditre, 2015; Zale, Lange, Fields, & Ditre, 2013).

Theories of psychoneuroendocrinology also examine how emotions and cognitions can affect the perception of pain. The main concept in these theories concerns how mental or physical stress can induce release of hormones and modulations of the immune function through the hypothalamic-pituitary-adrenocortical axis, the sympatho-adrenomedullary system, and the endogenous opioid system (Kreutz, Murcia, & Bongard, 2012). The presence of cortisol, a glucocorticoid, usually indicates psychological and physiological stress. Cortisol can weaken the immune system, reduce bone metabolism, inhibit the formation of collagen, and lengthen wound-healing time (Ebrecht et al., 2004; Kurcharz, 1988). These potential effects of cortisol can have ramifications for patients with pain.

Individuals who have a history of depression and anxiety tend to have a greater probability of developing chronic pain, potentially because of the psychoneuroendocrinologic factors described above (Gerrits et al., 2015). Other factors, such as depression and anxiety, may contribute to this correlation as well. Hermesdorf et al. (2016) hypothesized that individuals who have depression are more sensitive to pain. As increased pain intensity is a risk factor for the development of chronic pain, their team suggested this may partially explain the correlation of chronic pain and depression (Hermesdorf et al., 2016). Additionally, individuals who experience high trait anxiety often have negative thoughts and behaviors that keep them from making progress in physical rehabilitation following an acute pain event (Woo, 2010). Woo (2010) further emphasized that both poor pain control and mood disorders such as anxiety and depression contribute to the development of chronic pain. The reason for this may be because, as Hurwitz, Morgenstern, and Yu (2003) posited, pain and psychological distress may have a causal relationship with each other. Therefore, an individual with acute pain and depression may transition to chronic pain due to both physical and psychological reasons (Hurwitz, Morgenstern, & Yu, 2003)

While acute pain is a multidimensional experience, chronic pain represents even more of an intertwined multidimensional experience as neurological and physical states, physical functioning, beliefs and coping skills, emotional states, behaviors, and social interactions interact in chronic pain (Gold & Clare, 2012). For example, chronic pain can drive parts of the brain to alter synaptic connectivity related to cognitive abilities, which may then inhibit top-down processing and control of emotional states (Simmons, Elman, & Borsook, 2014). Chronic pain may also disrupt the reward pathways in the brain by causing circuit dysfunction, leading to anhedonia or depression (Becker, Ghandi, & Schweinhardt, 2012;

Elman, Zubieta, & Borsook, 2011). Studies have demonstrated that emotions, cognitions, and pain perception interact with each other, co-activating each other, thus leading to altered circuits and decreased emotional regulation (Simmons, Elman, & Borsook, 2014).

Summary

Pain is a subjective experience only known to the individual who is experiencing it. Both the body's reaction to tissue damage, causing the perception of acute pain, and pain with no evolutionary purpose, causing the perception of chronic pain, are multidimensional and affected by many factors. These factors include emotions and psychological factors, like anxiety, and cognitions, such as the belief that the pain is unbearable. These factors often interact with each other; cognitions and emotions may affect the perception of pain, which may then affect cognitions and emotions. All are inextricably connected to and impact each other.

Treatment of Pain

Assessment

Since pain is a subjective experience, patient self-report is the most effective means of assessing pain in cognitively intact adults (Wells, Pasero, & McCaffery, 2008). Health care professionals can use a multitude of existing pain scales demonstrating reliability and validity, including the commonly used 1-10 Numeric Pain Rating Scale (McCaffery & Pasero, 1999). This scale asks the client to indicate the level of their pain using a number between zero and 10 with zero indicating no pain at all and 10 indicating the most pain. The Wong-Baker FACES Pain Rating Scale is also commonly used and consists of six faces indicating varying levels of pain with numbers similar to the Numeric Pain Rating Scale written beneath the different faces (Wong, Hackenberry-Eaton, Wilson, Winkelstein, &

Schwartz, 2001). Other frequently used pain scales include the Brief Pain Inventory (Chapman & Syrjala, 2001), a pain assessment tool for use with cancer patients; the Visual Analog Scale (Portenoy & Tanner, 1996), a line representing a continuum of pain upon which the patient places a mark to represent his or her pain; and the McGill Pain Questionnaire (Melzack, 1975), a series of questions that allows the patient to clearly describe the quality and severity of his or her pain.

While not as effective, health care professionals may also use observational tools to assess the level of a patient's pain. These tools are effective when the patient cannot talk, such as if he or she is intubated or if he or she has developmental disabilities that prevent speech. One such scale is the Behavioral Pain Scale (Payen et al., 2001). Using this scale, the patient facial expressions, upper limb movement, and compliance with ventilation receive ratings on a 1-3 scale. An observational scale that may be used with non-intubated patients includes the Critical Care Pain Observation Tool (Gélinas, Fillion, Puntillo, Viens, & Fortier, 2006), which rates the patient's facial expression, body movements, muscle tension, and compliance with ventilator/vocalization from 0-2 with designated criteria for each score.

Physiological signs may also help evaluate an individual's level of pain. Decreased heart rate and blood pressure can often be indications of analgesia in anesthetized patients, thus theoretically demonstrating decreased perception of pain (Bantel & Trapp, 2011). Respiratory rates may also indicate pain perception, with higher rates indicating a higher level of pain (Fowler et al., 2011). Even with the physiological signs, self-report is still considered the best way to assess the level of pain perception in a patient.

In 2006, the American Pain Society proposed suggestions for the assessment of individuals in pain. They suggested beginning with an initial pain evaluation to determine

the physical aspects of pain, including location, quality, severity, triggers, and fluctuations. Following this, they suggested performing an assessment on the physical and psychosocial impact of the pain, including general activity level, sleeping patterns, mood, and relationship patterns. The health care professional should then gather pain-related history, such as comorbidities and pain treatment history, and perform a physical examination on the patient. The final step of the assessment the American Pain Society suggested is setting treatment goals with the patient, including having the patient state what level of pain relief would be acceptable to them. After this, treatment follow-up to determine the effectiveness of the pain management plan should occur.

Treatment of Acute Pain

For individuals with acute pain, the overarching goal of pain treatment is to decrease the perception of pain while also decreasing the possibility of the development of chronic pain (Volochayev, n.d.). By having a decreased perception of pain, the body is able to focus fully on resting and healing instead of diverting energy and resources towards anxiety and movement (Ramthel, 2012). Additionally, when acute pain is managed properly and effectively, the probability of chronic pain occurring is decreased (Kehlet et al., 2006).

Interventions to address acute pain are, for the most part, medication-based. The most frequently used interventions tend to be opioids, followed by non-steroidal anti-inflammatory drugs and muscle relaxants (Friedman, Chilstron, Bijur, & Gallagher, 2010); however, recent research has found that these medications are not as safe and efficacious as previously believed (Bot et al., 2014). Additionally, side effects of opioid consumption include dizziness, nausea, vomiting, constipation, physical dependence, tolerance, and

respiratory depression (Benyamin et al., 2008). Thus, patients may be subjected to detrimental side effects from the opioid consumption with little or no benefit.

Researchers have not done much to examine the potential of psychological interventions with patients in acute pain. Health care professionals commonly use patient education to help the patient understand what is happening pain-wise and what the patient can expect (Carlesso, Gross, MacDermid, Walton, & Santaguida, 2015). This may help the client decrease anxiety since he or she will know what to expect; however, interventions specifically targeting the emotional components of acute pain appear to not have been a focal point of acute pain research. This indicates a significant gap in the literature concerning the treatment of acute pain since psychological and emotional factors, such as persistent anxiety and depression during an acute pain episode, may be a risk factor for a transition to chronic pain, the antithesis of acute pain treatment goals (Carlesso et al., 2015; Casey, Greenberg, Nicassio, Harpin, & Hubbard, 2008).

With the potential for negative side effects from medication used to treat acute pain and the importance of addressing psychological factors in patients with acute pain, researchers are exploring different ways of treating acute pain. Ultimately, a patient's exposure to the length of time and dose of opioids should be limited with multimodal approaches to pain and anxiety management, including examining the effect psychological factors have on pain management (Bot et al., 2014).

Treatment of Chronic Pain

As with acute pain, the general goal in the treatment of chronic pain is to decrease the perception of pain. Doing this can help the individual with chronic pain live his or her life as fully as possible despite the pain (Roditi & Robinson, 2011); however, there is another

element to the goals of individuals with chronic pain. This element focuses on an individual's psychological and social processes and provides coping skills for dealing with the pain long-term (Linton & Shaw, 2011). This part of the overarching goal also deals with social issues and the importance of social support (Takai, Yamamoto-Mitani, Abe, & Suzuki, 2015).

Interventions to address chronic pain can be broken down into physical interventions and psychological interventions. Physical interventions include medication, such as non-opioid analgesics, nonsteroidal analgesics, and opioids, as well as physical exercise (Bourbonnais and Tousignant, 2012; Chiou, Lin, & Huang, 2009; Crowe, Whitehead, Jo Gagan, Baxter, & Panckhurst, 2010; Falope & Appel, 2015; Stinson et al., 2013; Tsai, Liu, & Chung, 2010). Clearly, physical interventions for chronic pain seek to address the physical causes of the pain or to make the physical symptoms of the pain more manageable.

However, using medications as a means of addressing the physical aspect of chronic pain is not as safe and efficacious as previously believed (Bot et al., 2014). A 2006 study of chronic pain found that 40% of responders with chronic pain reported inadequate management of their pain, and 64% of responders with chronic pain taking medications indicated that, at times, their medication was not enough to control their pain (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006; Marcus, Cope, Deodhar, & Payne, 2009). A lack of correlation between opioid dose adjustment and pain score change in patients with chronic pain is well documented, thus indicating the need for other methods of treatment as well (Chen et al., 2013).

Furthermore, efficacious treatment for patients in chronic pain is especially important now due to the opioid addiction epidemic (Garland, Froeliger, Zeidan, Partin, & Howard,

2013). The accuracy of assessment methods to predict opioid abuse currently remains unclear, and there is a lack of data concerning the long-term use of opioids and improvements in the quality of life of a patient with chronic pain (Bailey & Vowles, 2015). Consequently, as previously discussed, other effective treatment approaches for chronic pain that can help decrease the length of time and dose of opioids a patient consumes is now, more than ever, critical.

Other such treatment approaches include psychological interventions that address the mental and emotional aspects of chronic pain. This can be important since sometimes no physical etiology can be found with chronic pain. Several psychological interventions have been researched and are currently being used with individuals with chronic pain. One intervention is cognitive-behavioral therapy (CBT), the goal of which is to examine and correct an individual's distorted beliefs about pain (Linton & Shaw, 2011; Tang, 2017). An offshoot of CBT often used with individuals experiencing chronic pain is acceptance and commitment therapy, during which the individual learns to accept the pain and increase behavior that he or she finds valuable (Buhrman et al., 2013; Cederberg, Cernval, Dahl, von Essen, & Ljungman, 2016). Mind-body approaches, including mindfulness, during which the individual in pain learns to accept his or her body and to not avoid painful situations, is another form of psychological intervention (Menzies & Kim, 2008). In general, most psychological interventions for chronic pain seek to increase the individual's self-efficacy by learning coping strategies that allow him or her to understand that he or she has control over the pain (McGillion et al., 2008; Nes, Eide, Kristjansdottir, & van Dulmen, 2013).

Summary

Because of the subjective experience of pain, patient-self report is the most accurate means of assessing the amount of pain an individual is experiencing, although observational and physiological signs may also be used. Addressing acute pain and preventing its progression to chronic pain is an essential part of the treatment of acute pain, and frequently includes medication. An often overlooked part of treating acute pain is addressing psychological factors, such as anxiety and depression, which may be risk factors for the progression from acute pain to chronic pain. Once chronic pain has developed, those psychological factors become a more prominent part of the treatment process, in addition to physical interventions, as the individual learns how to live with the pain and still find meaning in life.

Music and Pain

Music and the Brain

Music affects primary and secondary regions in the cerebral cortex, in the frontal lobe, and the parietal lobe, as well as the cerebellum and the extended emotional network. Additionally, music affects the limbic system, including the cingulate gyrus, the amygdala, hippocampus, and midbrain (Altenmüller & Schlaug, 2012; Bernatzky et al., 2012; Menon & Levitin, 2005). Music therapy functions as an audioanalgesia by interfering with the brain's perception of pain, reducing anxiety, reducing muscle tension, and stimulating endorphins (Bailey, 1986; Dileo & Bradt, 1999; Magill-Levreault, 1993; Saperston, 1999). With an understanding of this, researchers have done studies to determine the potential of using music as audioanalgesia.

Music Listening

Music listening can be one way to utilize music as audioanalgesia. While music listening can provide some benefits to individuals in pain, it is not music therapy as defined by the American Music Therapy Association. Even though music is utilized, the therapeutic relationship and the expertise of the music therapist within the music therapy relationship are missing. Studies concerning the use of music listening to decrease the perception of pain do, however, indicate some positive benefits, even in the absence of a music therapist.

Researchers have often used classical music during their studies concerning the use of music and pain perception. For example, Zenobi, Muzi, and Amato (2012) divided patients in a hospital emergency department into a treatment group that received the treatment condition of listening to 30 minutes of classical music and a control group that received standard care. Patients in the treatment group demonstrated 80% improved pain symptoms as measured by the Visual Analog Scale (VAS) and a 30% decrease in self-reported anxiety, while the control group demonstrated a 30% increase in anxiety.

Liu and Petrini (2015) also examined the effects of soft music in patients with pain. Patients who had recently received thoracic surgery were divided into a treatment group that received the treatment condition of listening to 30-minutes of soft music for three days and a control group that received standard care. The treatment group experienced significant decreases in pain, anxiety, and heart rate over time.

Studies of patients experiencing pain also review the benefits of patient-preferred music. Simavli et al. (2014) explored the use of listening to self-selected music during labor and found that mothers in the music listening group had significantly lower levels of postpartum pain and anxiety than the control group at all time intervals. Özer, Özlü, Arslan,

and Günes (2013) demonstrated similar findings of patients using music listening after undergoing open-heart surgery. The music listening group listened to self-selected music of their choice for 30 minutes and demonstrated a statistically significant lower pain score than the control group.

Summary

Since music affects many parts of the brain, and since both music and pain are interpreted in the brain, an individual listening to music may experience decreased perception of pain as a result of listening to music. This is called audioanalgesia, and, while it is not the same thing as music therapy, this demonstrates that using music to decrease the perception of pain is feasible. Consequently, treatments may utilize the use of music with patients experiencing pain within the context of music therapy to further improve patient results due to the added factors of the therapeutic relationship and the music therapist's clinical training.

Music Therapy and Pain

Music Therapy and Acute Pain

Purpose and goals. As with the non-music therapy treatment of individuals in acute pain, the overarching music therapy purpose when treating individuals in acute pain is to decrease the perception of pain. This may include decreasing an individual's stress and anxiety since stress and anxiety affect pain perception. Ultimately, the goal is clear—allow the individual to rest so that their body may heal. Furthermore, if an individual is continuously in a persistent pain state, the likelihood of chronic pain developing increases. Thus, decreasing pain perception also decreases the probability of the development of chronic pain.

Assessment. The next step in using music therapy with individuals in acute pain is to assess them to determine their specific goals and objectives. A standardized music therapy pain assessment is currently not available (Allen, 2013). Magill-Levreault (1993) suggested that, in the assessment process, music therapists should assess the client's functional ability, coping ability, and prior musical experiences. Allen (2013) expanded upon this, suggesting that when music therapists work with patients in acute pain, the assessment process should place an emphasis on what the client wants, needs, and desires while attending to the physical, psychosocial, emotional, and spiritual components of the patient's pain experience.

Interventions. In terms of music therapy treatment implementation, music therapists utilize a wide variety of approaches and interventions to assist clients in decreasing the perception of acute pain. Interventions include utilizing the iso-principle, entrainment, receptive music listening, music-assisted relaxation, and increasing client self-efficacy. In nearly all the interventions described below, the music therapist begins with the client in the client's current mentality and uses music to help the client reach a less distressing state.

The iso-principle. One approach to music therapy intervention that is the definition of meeting clients where they are is the iso-principle, used as the foundation for several music therapy interventions addressing pain management. When using the iso-principle, the music therapist creates a matching musical stimulus to an individual's existing state and then changes the musical stimuli in the direction in which the individual's state is to be influenced (Altshuler, 1948). This may not only affect the patient's psychological state and mood, but it may affect physiological changes as well.

Entrainment. Employing musical entrainment is the best illustrator of these physiological changes. Entrainment is another music therapy intervention in which the

music therapist improvises music that symbolically represents the patient's pain experience with gradual shifting to pain relief (Dileo & Bradt, 1999). In an experimental study, Bradt (2010) found that music entrainment was significantly more effective than the control condition on reducing postoperative pain perception in pediatric patients and observed a mood-enhancing effect. This finding built on Rider's 1985 finding that entrainment mechanisms were involved in pain reduction and that entrainment-mediated imagery involved both psychological and physiological pain relief mechanisms. Consequently, music could serve a variety of functions in enhancing the effectiveness of various behavioral medicine strategies.

Receptive music listening. Another intervention used with patients in acute pain is receptive music listening. Research has shown that receptive music listening to preferred music provided by a music therapist increases the effectiveness of music therapy and decreases pain for several reasons. First, listening to and making music is experienced as a joyous and rewarding activity through activity changes in the amygdala, ventral striatum, and other components of the limbic system associated with pain (Altenmüller & Schlaug, 2012; Menon & Levitin, 2005). Furthermore, the ability of the patient to have autonomy in selecting preferred music increases the patient's perceived control, which then decreases the perception of the pain itself (Mitchel & MacDonald, 2012). Finally, patient-preferred live music may be the best way to develop rapport and therapeutic alliance before utilizing more active interventions that may require emotional vulnerability (Silverman, Letwin, Nuehring, 2016).

Perlini and Viita (1996) demonstrated that individuals in a preferred music listening treatment condition possessed a greater control over the experience of pain and greater

expectations of pain reduction while undergoing a slightly painful procedure. Mitchell, MacDonald, and Knussen (2008) reported similar findings. Mitchell et al. (2008) found that the individuals in the preferred music treatment condition tolerated a painful stimulus significantly longer and reported feeling significantly more in control of the situation than individuals in the control condition. Furthermore, a Cochrane Review conducted by Cepeda, Carr, Lau, and Alvarez (2006) found that receptive music listening reduced individuals' pain intensity levels by more than 50%. Opioid requirements were reduced as well. These studies illustrate that, while research concerning the use of receptive music listening to decrease pain has provided varied results, the intervention increases individuals' perceived control when dealing with a painful stimulus as well as decreases individuals' perceived pain intensity.

Several studies using music therapy as a means of treating acute pain have demonstrated this. Fredenburg and Silverman (2014) examined whether a 30-minute receptive music therapy session using client-preferred music could improve positive and negative affect and decrease pain with cancer patients recovering from a blood and marrow transplant. Although it was an effectiveness study, the researchers inferred that this intervention may be an effective way to improve positive and negative affect and decrease pain in individuals recovering from a bone marrow transplant. Likewise, Yates and Silverman (2015) found that implementing a single music therapy session may decrease anxiety and increase relaxation in individuals on a post-surgical oncology unit. Madson and Silverman (2010) reported similar findings, demonstrating that individuals receiving a 15-35 minute music therapy session consisting of live patient-preferred music and therapeutic reaction showed significant improvement in self-reported levels of relaxation, anxiety, pain, and nausea. Thus, while research concerning the use of receptive music listening to decrease

pain has provided varied results, the intervention increases individuals' perceived control when dealing with a painful stimulus as well as decreases individuals' perceived pain intensity

Music-assisted relaxation. Music-assisted relaxation is another category of intervention that music therapists may use with clients in acute pain. In music-assisted relaxation, the music therapist utilizes music to structure and teach diaphragmatic breathing, lead progressive muscle relaxation, and facilitate imagery (Ghetti, 2012). For anxiety and pain, the most efficacious music-assisted relaxation scripts used are a short relaxation, a count-down relaxation, an autogenic-type relaxation, color induction, or light relaxation (Grocke & Wigram, 2007). Other interventions to address anxiety and stress include music listening, improvisation, and therapeutic singing. Music used in these interventions should have similar characteristics to the music used in music therapy pain reduction interventions; that is, the tempo should be between 60-80 beats per minute, dynamics should be soft and stable, the melody should be smooth, and the chord progression should be simple (Gooding, Swezey, & Zwischenberger, 2012).

The rationale for using music-assisted relaxation is based in the stress-tension-pain theory as well as the other pain theories that describe how stress and anxiety can increase the perception of pain. If stress and anxiety increase the perception of pain, decreasing stress and anxiety should decrease the perception of unnecessary pain. Music-assisted relaxation has been proven to decrease stress and anxiety; thus, using it to decrease the perception of pain by means of decreasing stress and anxiety makes sense.

Rider, Floyd, and Kirkpatrick (1985) examined the effects of music, progressive muscle relaxation, and guided imagery on adrenal corticosteroids, a stress hormone. While

there was no significant change in the mean corticosteroid level, Rider et al. (1985) found that circadian amplitude decreased significantly, indicating that music therapy can be used to alter body chemistry in a positive direction. Nillson, Unosson, and Rawal (2005) found that exposure to music postoperatively reduced cortisol levels, supporting the findings of Rider et al. Miluk-Kolasa and Matejek (1996) further supported these findings, demonstrating that patients in a music therapy treatment group returned to baseline physiological parameters faster than the control group following the communication of stressful medical information pertaining to upcoming surgeries. Chaput-McGovern and Silverman (2012) built upon Miluk-Kolasa and Matejek's results pertaining to stress, reporting that anxiety, pain, and relaxation were positively affected by music therapy, and those effects were maintained 30 minutes after the session ended. These findings indicate that music therapy reduces stress and anxiety, and those effects continue to manifest beyond the time of the intervention.

Increasing autonomy and client self-efficacy. Perceived control, or the belief in an ability to respond to events in a way that will decrease aversiveness of an event, is extremely important in the management of pain (Mitchell & MacDonald, 2012). Providing patients interventions based in autonomy and self-efficacy can increase the perceived control and consequently reduce the perception of pain, reduce anxiety and stress, and, for individuals with acute pain, increase positive postsurgical outcomes.

Providing patients with information concerning potential outcomes of surgical procedures can increase self-efficacy in individuals who are experiencing or will experience acute pain. Descriptions of such non-musical interventions exist; however, teaching patients to employ interventions such as music-assisted relaxation can further deepen the patient's self-efficacy (Louw, Diener, Butler, & Puentedura, 2012; Wylde, Marques, Artz, Blom, &

Gooberman-Hill, 2014). Kwan and Seah (2013) discussed how this was the primary focus of their efforts in non-pharmacological pain relief at a hospital in Singapore. Ghetti (2012) suggested the same, asserting that music therapy can reinforce the use of healthy existing coping strategies, introduce and rehearse new coping strategies such as relaxation and focusing attention, and facilitate cognitive re-framing of a situation. Bernatzky et al. (2012), Ghetti (2012), Heiderscheit (2013), and Louw, Diener, Landers, and Puentedura (2014) supported the idea of empowering the patient though reinforcing healthy coping strategies and teaching and rehearsing new coping strategies. Furthermore, Heiderscheit (2013) indicated that it is beneficial for the patient to practice the coping strategy prior to the painful and stressful event. By putting the power of autonomy and control in the hands of the patient, stress and pain may decrease when the painful and/or stressful stimulus is presented.

Music-assisted relaxation using music-supported guided imagery also increased patient self-efficacy in Gutgsell et al.'s 2013 study with patients experiencing chronic pain in palliative care. The patients received a single, 20-minute music therapy intervention consisting of the music therapist guiding an autogenic relaxation spoken over soft and slow music with a simple chord progression. The functional pain score of the clients decreased, indicating an increase in self-efficacy and pain self-management.

Summary. The goal of using music therapy to treat individuals experiencing acute pain is to provide a means for the body to rest and recover so that the individual does not develop chronic pain. A standardized music therapy assessment for individuals with acute pain does not exist, but the literature suggests focusing on the multiple dimensions of the pain experience, including assessing emotional needs. Interventions addressing the physical and emotional needs of individuals in acute pain include entrainment, receptive music

listening, music-assisted relaxation, and providing opportunities for self-efficacy. Much of the interventions is passive on the part of the client, and while therapists may address situational anxiety in the moment, general anxiety and depression tend not to be the focus of music therapy with individuals in acute pain.

Music Therapy and Chronic Pain

Due to the multidimensional nature of chronic pain, the music therapy treatment of individuals with chronic pain focuses on decreasing the perception of pain to allow the individual to live as full a life as possible, as well as resolving psychological and social issues that may exacerbate the pain perception. Additionally, providing coping skills, such as self-efficacy and building of social support, to assist the individual in dealing with the pain long-term is indicated.

Purpose and goals. As with the music therapy treatment of individuals with acute pain, there is currently no formal music therapy protocol available to use with individuals with chronic pain (Allen, 2013). Thus, the same guidelines as assessing individuals with acute pain apply: centering on the patients' desires while focusing on the physical, psychosocial, emotional, and spiritual domains (Allen, 2013). When treating individuals with chronic pain, more of an emphasis should be placed on the emotional components of assessment due to the multidimensional nature of chronic pain.

Interventions. After assessing individuals with chronic pain, music therapists may use a wide variety of interventions to address the perception of pain. Music therapy interventions used with individuals experiencing chronic pain include receptive music making and lyric analysis, music-supported guided imagery, vocal music therapy (VMT), increasing client autonomy and self-efficacy, emotional expression and processing, and

therapeutic singing. These interventions tended to be more active than interventions for individuals experiencing acute pain. Additionally, these interventions often presented more opportunity for deeper emotional work than the interventions for individuals experiencing acute pain.

Receptive music listening and lyric analysis. Receptive music listening and lyric analysis is a commonly used intervention, possibly due to the fact that it is an enjoyable and non-threatening experience (Roy, Peretz, & Rainville, 2008). Additionally, discussing lyrics can provide an appropriate amount of emotional distance if the client is unprepared to delve into deep, emotional discussion. If the client is ready to delve into emotional discussion, much can be gleaned from the themes and content to which the client is drawn. Elwafi and Wheeler's 2016 study demonstrated this, during which the content of music for individuals with cancer was analyzed. The lyric themes, similar to themes for individuals in chronic pain, included relaxation, emotions, spirituality, beauty, strength, energy/fatigue, pain relief, family, and physical problems/illnesses. The lyrics provided a means of emotional expression and reflection that was very meaningful to the clients.

Music-supported guided imagery. Music-supported guided imagery is another music therapy intervention that may help decrease the perception of pain in individuals with chronic pain. In addition to providing relaxation to individuals with chronic pain, music-supported imagery can also provide metaphorical and actual healing (Colwell, 1997). Lewandowski, Good, and Draucker's 2005 study showed this, in which patients with chronic pain verbally described their pain and created a visual image of what their pain looked like. The music therapists guided the patients into a state of relaxed focus and introduced them to sensory and personal images related to the patient's visualized pain image. They then instructed the

patients to change the image, and consequently change their experience of pain. Lewandowski et al. found that some patients with chronic pain who used the guided imagery technique stopped describing their pain as never-ending and instead increased their self-efficacy to handle the pain.

Czamanski-Cohen et al. (2014) utilized a similar intervention was utilized by Czamanski-Cohen et al. (2014) when they used a hybrid cognitive behavioral art-based protocol for treating individuals with chronic pain and illness. In this intervention, patients drew specific symptoms, such as pain, and described the picture to the therapist. The therapist then discussed with the patient how the patient could access coping resources within the context of the picture, and the patient altered the picture to reflect those resources. The therapist then led the patient in a guided imagery intervention where the patient explored a symptom given an image. The therapist then directed the patient to alter the texture, color, size, and/or temperature of the symptom to make it more tolerable. Czamanski-Cohen et al. found that the intervention was beneficial for women suffering from chronic pain. While the protocol described was designed for art therapy, it could be adapted using music therapy interventions such as improvisation and music-supported guided imagery to further increase its effectiveness.

Vocal Music Therapy. Vocal Music Therapy (VMT) is a newer form of music therapy that researchers are currently studying for its efficaciousness in its use with individuals with chronic pain. The intervention is based on a biopsychosocial approach to chronic pain (Bradt, Norris, Shim, Gracely, & Gerrity, 2016). On the bioneurological level, music not only activates the opioid-rich midbrain that controls the descending inhibition of pain, but it also influences parts of the brain that are involved in the affective and cognitive

modulation of pain (Brown, Martinez, & Parsons, 2004; Koelsch, 2010). On a psychological level, participants reconnect with their body in a positive way, increase body awareness, and increase a caring and accepting attitude towards their body (Bradt et al., 2016). On a social level, participants create music together, which promotes a sense of belonging, the opposite of the isolation that often accompanies chronic pain (Bradt, 2016).

VMT, as developed by and written about by Bradt et al. in their 2016 study, begins with a music-guided deep breathing to assist the clients in bringing focus to their body. Afterwards, the clients participate in a verbal-check in. The clients engage in toning and humming experiences, and the group then verbally processes the experience. Next, the clients participate in a vocal improvisation followed by a group singing of an inspirational song selected by a group member. The results from the study indicated a large effect on self-efficacy, and a greater pain reduction in the VMT group than in the control group at the end of treatment. Themes from the qualitative analysis of the VMT sessions included self-management, togetherness, and transformation.

Increasing autonomy and client self-efficacy. Self-management, self-efficacy, and coping skills are another point of focus for using music therapy with individuals with chronic pain, the rationale for this being that perceived control can reduce anxiety and stress, and thus reduce the perception of pain. Specific music therapy interventions focusing on this goal can include teaching the patient to harness strategies such as using music as a distractor or helping patients better understand and manage their symptoms (Angheluta & Lee, 2011). For example, Bailey (1986) found that encouraging the patient to become involved in the music assists the patient in regaining a sense of control and facilitates the patient's process of becoming active in his or her own pain management. Colwell (1997) even developed her

sessions with the overall goal of providing the patient with pain management skills that he or she would be able to utilize independently after the conclusion of therapy. Interventions that therapists can use to teach the patient pain management skills include music listening, imagery and relaxation, and vocal and instrumental rehearsal, as well as utilizing cognitive behavioral strategies to increase patient self-efficacy (Colwell, 1997; Czamanski-Cohen et al., 2014; Kenny & Faunce, 2004).

Emotional expression and processing. Since emotional states and mood affect the intensity and interpretation of chronic pain, music therapy interventions addressing emotional expression and processing are also important in the treatment of individuals with chronic pain, perhaps even more so than for individuals with acute pain. Music is unique in its ability to address mood and emotion in that it can offer a sense of companionship to the listener, it can soothe and console, and it can provide a sense of universality (Gold & Clare, 2012). It can also act as a catalyst, bringing the patient's thoughts and feelings into focus (Bailey, 1986). Furthermore, listening to music and discussing it can provide the patient with a sense of safety; it can facilitate non-verbal emotional expression and allow the patient's inner feelings to be expressed in a safe, non-threatening way (Chan, Chan, Mok, & Tse, 2009). Music therapy to promote emotional expression can include therapeutic singing, songwriting, and improvisation.

Therapeutic singing. Kenny and Faunce (2004) utilized therapeutic group singing with chronic pain patients at a multidisciplinary pain clinic. The clients in the treatment condition attended and participated in 30-minute music therapy sessions consisting of small group singing. Although the group size was small, Kenny and Faunce (2004) found that individuals participating in the small group singing sessions demonstrated improvements in

coping after the sessions completed as compared to the control group, whose condition consisted of listening to music while exercising. Both groups demonstrated increases in mood and perceived pain.

Maddick (2011) utilized therapeutic singing in addition to other interventions aimed at increasing emotional expression such as songwriting and playing instruments. The clients in this study were 13 men with spinal cord injury. While these clients' primary diagnosis and reason for music therapy was not chronic pain, coping with a new lifelong condition with physiological, psychological, and social effects make the two populations somewhat comparable. The clients participated in individual and group sessions that complemented each other. The songwriting interventions were especially useful in aiding the clients in emotional expression. For most participants, the music acted as "a conduit for emotional expression or release in some way that assisted in their adjustment to acquired disability" (Maddick, 2011, p. 134)."

Summary. As with using music therapy with individuals with acute pain, one of the music therapy goals when working with individuals with chronic pain is to decrease the perception of pain; however, since emotional and psychological factors tend to have more to do with the perception of chronic pain, there is an added focus of addressing the emotional needs of individuals with chronic pain. This is seen in the amount and breadth of music therapy interventions used with this population, including receptive music therapy and lyric analysis; music-supported guided imagery; active music making, including vocal music therapy and therapeutic singing; interventions targeting increasing self-efficacy; and interventions focused on emotional expression and processing. These interventions are both receptive and active, indicating somewhat more involvement on the client's part the client

and therapist together process and work through the client's emotional needs. Emotional and psychological needs thus clearly become one of the most important focuses with individuals with chronic pain.

Addressing psychological and emotional factors such as anxiety and depression are essential to the efficacious treatment of pain. As anxiety and depression are risk factors in the development of chronic pain, effectively addressing these needs prophylactically may decrease the incidence of chronic pain. Currently, most of the music therapy literature focuses on addressing situational anxiety in individuals with acute pain, while general anxiety and depression are the focus for individuals with chronic pain. Thus, there seems to be a gap in the literature concerning the use of music therapy to address general anxiety and depression prior to and during acute pain. With America's high incidence of chronic pain and growing opioid epidemic, this is an essential part of the field of music therapy and its relation to pain that needs to be examined.

Statement of Purpose

The purpose of this study was to determine if, when, and how music therapists address anxiety and depression when working with individuals experiencing pain. The researcher hypothesized that for individuals experiencing acute pain, anxiety is addressed in the moment after an acute pain event, such as surgery, using receptive techniques such as music-assisted relaxation, but depression is not addressed. For individuals experiencing chronic pain, the researcher hypothesized that depression and anxiety are addressed during the chronic pain state and consist of active music making experiences. Overall, the researcher hypothesized that individuals develop chronic pain before music therapists address the deep psychosocial needs pertaining to anxiety and depression.

Research Questions

1. Do music therapists address client depression when working with individuals experiencing acute pain?
    - If so:
        - At what point in the acute pain process is depression addressed?
        - How is depression addressed with individuals experiencing acute pain in terms of assessment, treatment goals, and interventions?
2. Do music therapists address client anxiety when working with individuals experiencing acute pain?
    - If so:
        - At what point in the acute pain process is anxiety addressed?
        - How is anxiety addressed with individuals experiencing acute pain in terms of assessment, treatment goals, and interventions?
3. Do music therapists address client depression when working with individuals experiencing chronic pain?
    - If so:
        - How is depression addressed with individuals experiencing chronic pain in terms of assessment, treatment goals, and interventions?
4. Do music therapists address client anxiety when working with individuals experiencing chronic pain?
    - If so:
        - How is anxiety addressed with individuals experiencing chronic pain in terms of assessment, treatment goals, and interventions?

5. How do music therapists conceptualize the treatment of acute and/or chronic pain using music therapy?

Chapter 3

Method

Participant Characteristics

The researcher solicited participants by sending email messages containing a survey to 489 music therapists who were board-certified by the Certification Board for Music Therapists at the time of the study. Email addresses of board-certified music therapists who work with adults were purchased from the Certification Board for Music Therapists. Since pain affects more people than just individuals in hospitals, the researcher requested email addresses for all board-certified music therapists who work with adults.

A total of 68 music therapists out of the 489 identified responded to the questionnaire. Four emails were returned as undeliverable, and one respondent emailed the researcher indicating they should not be included in the survey as they were no longer practicing music therapy. Removing these five names resulted in a 14% response rate. All responses were included in the results.

The participants were 88% female (n = 60), 12% male (n = 8), and 0% other (n = 0). 41% of participants identified their age as 25-34 years (n = 28), 23% of participants identified their age as 45-54 years (n = 16), 19% of participants identified their age as 35-44 years (n = 13), 9% of participants identified their age as 55-64 years (n = 6), 4% of participants identified their age as 65 years or older (n = 3), and 3% of participants identified their age is 18-24 years (n = 2). Responses of participants' ages are shown in Table 1.

Table 1

Ages of Participants

Age	**Frequency**	**Percentage**
18-24 years	2	3%
25-34 years	28	41%
35-44 years	13	19%
45-54 years	16	24%
55-64 years	6	9%
Age 65 or older	3	4%

53% of participants indicated their highest level of education obtained in music therapy was a bachelor's degree (n = 36). 29% of participants indicated having obtained a master's degree in music therapy (n = 20), 12% indicated having obtained a music therapy equivalency (n = 8), and a 6% indicated having obtained a doctorate in music therapy (n = 4). Participants' highest levels of education in music therapy are shown in Table 2.

Table 2

Highest Educational Level Obtained in Music Therapy

Degree Type	**Frequency**	**Percentage**
Bachelor's Degree	36	53%
Master's in Music Therapy	20	29%
Music Therapy Equivalency	8	12%
Doctorate	4	6%

While only 24 participants described the year in which they received their highest level of education in music therapy, the distribution was skewed with the years ranging from 1975 to 2015 and having a mode of 2015, a median of 2008, and a mean of 2004.

Participants practiced as a board-certified music therapist (MT-BC) ranging from one to 37 years with an average of 12.42 years, a median of 9 years, and a mode of 8 years. Participants also selected additional trainings and certifications. The categories of additional trainings and certifications included neonatal intensive care unit music therapy, neurologic music therapy, Bonny Method of Guided Imagery and Music, education, psychology/counseling, and early childhood.

The most common theoretical orientation utilized by participants was person-centered, with 36% of participants indicating that as their primary theoretical orientation (n = 24). Other theoretical orientations indicated were cognitive behavioral, (n = 13), existential (n = 1), interpersonal (n = 1), and behavioral (n = 1). Participants also indicated an eclectic theoretical orientation (n = 20) or an "other" theoretical orientation (n = 5). Some participants offered approaches that were not listed, including family systems, multicultural, and Adlerian orientations. Some participants also listed several theoretical orientations and explained their rationale for using an eclectic approach.

Pain is a universal experience; thus, the researcher sent surveys to all board-certified music therapists since all may have the opportunity to work with adult clients in pain. The most commonly selected locations of where participants worked were medical hospitals, private music therapy practices, hospice, psychiatric hospitals, and nursing homes. Participants also indicated other locations (see Table 3).

Table 3

Setting in Which Participants Are Currently Practicing

Setting	**Frequency**	**Percentage**
Medical hospital	35	52%
Private music therapy practice	12	18%
Hospice	11	16%
Psychiatric hospital	8	12%
Nursing home	4	6%
Community mental health center	3	4%
Neurological rehabilitation center	3	4%
Pediatric hospital	3	4%
Correctional facility	2	3%
University teaching	2	3%
Community music school	1	2%
Family health services center	1	2%
Forensic hospital	1	2%
Residential substance abuse facility	1	2%
School	1	2%
Veteran's Affairs	1	2%
Halfway house	0	0%

Participants indicated that they work with adults experiencing both acute and chronic pain, adults experiencing chronic pain, and adults experiencing acute pain. Some participants indicated that they did not work with adults experiencing pain (see Table 4).

Table 4

Types of Pain Treated by Participants

Type of pain	**Frequency**	**Percentage**
Adults experiencing both acute pain and chronic pain	36	53%
Adults experiencing chronic pain	6	9%
Adults experiencing acute pain	3	4%

Measures

Since no preexisting surveys concerning the use of music therapy to address anxiety and depression in individuals experiencing pain exist, the researcher created a 35-item survey called the *Pain, Music Therapy, and Psychological Factors Questionnaire* (see Appendix A). This survey gathered demographic information about music therapists who work with adults experiencing pain. The researcher also collected information concerning whether music therapists address general anxiety and depression in adults experiencing acute pain and adults experiencing chronic pain. If the music therapist indicated that they did address anxiety and depression in adults experiencing pain, the survey asked the music therapist to specify the goals the music therapist sets with a client experiencing pain, at what point in the pain process they implement the interventions, and what interventions the music therapists utilizes. The survey consisted of 35 questions, 9 of which related to demographics. The survey was created and distributed via email through Qualtrics, an online survey program, to

all music therapists board-certified through the Certification Board for Music Therapists (Qualtrics, 2017).

The survey consisted of four sections. Section One consisted of nine demographic questions. Section Two consisted of 12 questions relating to the use of music therapy with adults experiencing acute pain. Section Three consisted of 10 questions relating to the use of music therapy with adults experiencing chronic pain. Section Four consisted of five open-ended questions where participants could share their personal opinions and experiences of using music therapy with individuals in pain. Section Four also had a question where participants could indicate their willingness to be interviewed and provide their email address to the researcher.

Additionally, since there are no preexisting interview measures for music therapists concerning the use of music therapy to address anxiety and depression in individuals experiencing pain, the researcher created *The Use of Music Therapy to Address Anxiety and Depression in Clients with Pain Interview* (see Appendix B). The interviews were semi-structured, with the researcher preparing 10 open-ended questions. The questions pertained to the music therapists' perception and treatment of individuals experiencing pain, how and when the music therapists perceive and address psychological factors in their work with individuals experiencing pain, and how they conceived the differences between acute and chronic pain.

The survey also included an option for the respondent to indicate that he or she was willing to be interviewed. From the participants who volunteered, the researcher selected three music therapists based on their experience, their time in the field, and their research pertaining to the subject matter of pain and music therapy. One music therapist worked

primarily with adults experiencing chronic pain, one worked with adults primarily experiencing acute pain, and one worked with adults experiencing both acute and chronic pain. Two of the music therapists worked in Cleveland at separate facilities; one worked in California. Two of the music therapists worked primarily at medical facilities; one worked in a private practice that is contracted by a medical facility.

Research Design

The survey created by the researcher utilized closed- and open-ended questions to ascertain if, how, and at what point music therapists address anxiety and depression with clients experiencing acute pain and clients experiencing chronic pain. The survey data were comprised of demographic information as well as with what population the music therapist worked, at what point in the pain process the music therapist worked with adults experiencing pain, client goals the music therapist sets when working with adults experiencing pain, interventions utilized with adults experiencing pain, and assessment of treatment. The narrative data consisted of elaborations on quantitative answers and the responses to the open-ended questions.

The semi-structured interviews further provided elaboration and detail about using music therapy with adults experiencing pain. The interviews focused on how three music therapists perceive the treatment of adults experiencing pain, how the music therapists incorporate interventions that address anxiety and depression with adults experiencing pain, and how the music therapists conceive the differences between acute and chronic pain to further clarify how music therapists approach treatment for anxiety and depression for adults experiencing chronic pain and adults experiencing acute pain.

Procedure

The survey was sent to participants via email. The researcher sent the initial email four weeks prior to the due date, and the email contained a consent form and link to the survey (see Appendix C). Two email reminders were sent: one was sent two weeks before the due date and one was sent one week before the due date. The researcher received IRB approval/exemption prior to sending out the survey (see Appendix E).

For the interviews, the researcher emailed the interviewees a consent form, which the interviewee signed and returned electronically prior to the interview (Appendix D). Interview times were scheduled following receipt of the consent form. Having received the signed consent forms via email, the researcher conducted the semi-structured interviews by telephone and recorded them using QuickTime Player (QuickTime Player, 2017). The researcher transcribed the interviews, and the participants were provided electronic transcripts of their transcribed interviews for member-checking to increase validity of results. Two participants indicated that the transcript was correct; one participant changed the number of years she said she had worked as a music therapist, having misspoken during the interview.

Data Analysis

The researcher analyzed descriptive data through Qualtrics (Qualtrics, 2017). The qualitative data from the survey's open-ended questions were grouped into the categories of using music therapy with adults experiencing acute pain and using music therapy with adults experiencing chronic pain. Themes emerging from the qualitative data concerning the use of music therapy with adults experiencing acute pain included utilizing the interventions to address emotions and mood; using music therapy interventions to refocus attention; using

music therapy interventions to increase client self-efficacy; the importance of the iso-principle; the individualized nature of music therapy treatment; and allowing for client choice in music therapy intervention offerings. Themes emerging from the qualitative data concerning the use of music therapy with adults experiencing chronic pain included emphasizing client choice, increasing client self-efficacy, addressing psychological and emotional areas of the client's life, understanding and addressing the multidimensional aspects to chronic pain, and an emphasis on the individualized nature of music therapy treatment for pain.

The researcher analyzed the interview responses for themes. The responses were then grouped into categories based on the research questions. Responses were compared to each other and to survey responses to examine similarities and differences and to synthesize the results from the two sources of data.

Chapter 4

Survey Results

This chapter will report the results from the 36-item *Pain, Music Therapy, and Psychological Factors Questionnaire.* The information will be presented in the three sections consistent with the remaining sections of the survey: music therapy and acute pain, music therapy and chronic pain, and open-ended responses.

Section 1: Music Therapy and Acute Pain

This section of the questionnaire concerned how music therapists work with clients who are experiencing acute pain. This section included questions about assessment, timing of treatment, goals, how psychological factors are or are not considered during treatment, and interventions for clients experiencing acute pain.

The researcher provided the definition of acute pain, and participants were asked to indicate whether they worked with individuals in acute pain. Out of the 39 participants who answered this question, 36 indicated that they did and were permitted to answer the rest of the questions in this section.

Participants indicated the types of music therapy sessions they facilitate with clients experiencing acute pain. While most participants reported providing individual sessions with clients experiencing acute pain, one reported only group sessions; some used both (see Table 5).

Table 5

Types of Music Therapy Sessions Facilitated with Clients in Acute Pain

Type	**Frequency**	**Percentage**
Individual	24	71%
Both	9	27%
Group	3	9%
Other[a]	1	3%

[a] "Co-treatment sessions with PT or OT."

The survey asked participants to select all sources of information they used to assess clients at the beginning of music therapy treatment for acute pain. Nearly all participants selected "client-provided pain rating" and "current emotional state." While not selected as frequently, a majority of participants indicated that they also used "physical indications" "client medical history," and "client coping mechanisms." Participants selected "physiological indications" the least (see Table 6)

Table 6

What Music Therapists Use to Assess at the Beginning of Treatment for Acute Pain

Assessment Area	**Frequency**	**Percentage**
Client-provided pain rating	32	94%
Current emotional state	31	91%
Physical indications[a]	26	76%
Client coping mechanisms	21	62%
Client medical history	21	62%
Client functional ability	20	59%
Client social supports	19	56%
Client's previous musical experiences	17	50%
Client psychological history	15	50%
Client spiritual supports	15	44%
Physiological indications[b]	11	32%
Other[c]	4	12%

[a] Grimacing, respirations, muscle tension, restlessness, recoil, wincing, facial expressions, body posture, and verbal groans and vocalizations
[b] Elevated blood pressure and heart rate and decreased oxygen saturation rates
[c] Verbal indications of willingness to participate, anecdotal evidence from medical staff, family, and patient, and patient self-report of history and current state

When asked if they utilized music therapy with clients before the client experiences acute pain, twenty-four participants indicated that they do. Of those twenty-four, nineteen participants answered the following two questions inquiring if they used music therapy to address anxiety and depression in clients before the clients experience acute pain. In both questions, all participants indicated that they use music therapy to address anxiety in clients before they experience acute pain (100%), and all participants indicated that they use music therapy to address depression in clients before they experience acute pain (100%).

In terms of what areas of functioning are addressed when working with clients before they experience acute pain, the most commonly selected responses were "triggers of anxiety," "muscle tension," and depressed mood." Other responses included "restlessness,"

"anticipation of outcomes," "fatigue or loss of energy," "feelings of worthlessness," and "sleep difficulties" (see Table 7).

Table 7

Need Areas Addressed in Music Therapy Before the Client Experiences Acute Pain

Need area addressed	**Frequency**	**Percentage**
Triggers of anxiety	18	95%
Depressed mood	16	84%
Muscle tension	16	84%
Restlessness	13	68%
Anticipation of outcomes	11	58%
Fatigue or loss of energy	11	58%
Feelings of worthlessness	11	58%
Sleep difficulties (insomnia, hypersomnia, sleep disturbance)	10	53%
Diminished ability to think or concentrate	10	53%
Aspects of thinking	9	47%
Self-efficacy	9	47%
Loss of interest or pleasure	8	42%
Recurrent thoughts of death	7	37%
Attitude toward surgery	5	26%
Psychomotor agitation or retardation	5	26%
Other[a]	3	16%

[a]Social and recreational habits and music experiences, history, and preferences

The most selected goal for the client's music therapy treatment before the client experiences acute pain was "increase relaxation," with "increase positive coping skills" as the second most selected goal. Other frequently selected goals included "increase mindfulness," "elevate mood," and "decrease the perception of pain" (see Table 8).

Table 8

Music Therapy Treatment Goals Before the Client Experiences Acute Pain

Music Therapy Goal	**Frequency**	**Percentage**
Increase relaxation	19	100%
Increase positive coping skills	17	89%
Elevate mood	16	84%
Increase mindfulness	16	84%
Increase emotional expression	15	79%
Decrease perception of pain	14	74%
Decrease negative beliefs	12	63%
Increase social support	10	53%
Increase client self-efficacy	9	47%
Decrease distorted cognitions	8	42%
Decrease catastrophic thinking	7	37%
Other[a]	2	11%

[a] Establishing rapport, client preferences, and expressing spiritual beliefs and values

Participants selected the kinds of interventions they implement with clients before the client experiences acute pain. The most commonly selected interventions were "receptive music listening to client-preferred music," "active music making," and "entrainment." Other interventions selected included "therapeutic song singing," "improvisation," "music-assisted relaxation—guided imagery," and "music-assisted relaxation—progressive muscle relaxation." The least utilized interventions were "lyric analysis" and "the Bonny Method of Guided Imagery and Music" (see Table 9).

Table 9

Music Therapy Interventions Utilized Before Clients Experience Acute Pain

Music Therapy Intervention	**Frequency**	**Percentage**
Receptive music listening to client-preferred music	18	95%
Active music making	16	84%
Entrainment	16	84%
Therapeutic song singing	15	79%
Improvisation	14	74%
Music-assisted relaxation—guided imagery	14	74%
Music-assisted relaxation—progressive muscle relaxation	14	74%
Receptive music listening to recorded client-preferred music	11	58%
Songwriting	11	58%
Movement to music	9	47%
Lyric analysis	8	42%
Music-assisted relaxation—autogenic training	7	37%
The Bonny Method of Guided Imagery and Music	1	5%
Other	0	0%

When asked how participants used the interventions above with clients prior to the client experiencing acute pain, 14 participants answered. From their answers, several themes emerged. The themes were (a) utilizing the interventions to address emotions and mood, (b) using the interventions to refocus attention, (c) utilizing the interventions to address client anxiety, (d) expressing the importance of the iso-principle, and (e) emphasizing the individualized nature of the music therapy treatment.

The following are several examples of music therapy interventions used to address client emotions and mood as provided by the participants:

- "Lyric analysis is used frequently to determine current emotional state and recurrent emotional state. Also used to verbally process, increase life review and reminiscence, and openly discuss death and dying."

- "Depending on client's level of responsiveness, I use singing and instrument playing to assess… and elevate mood and energy… Improvisation and songwriting is used to determine mood and thoughts and improve communication of feelings."

The following are examples of utilizing music therapy interventions to refocus client attention to increase comfort.

- "Muscle relaxation and entrainment is mainly used to distract from pain…"
- "[I use music therapy interventions to] provide meaningful distraction while waiting or being prepped for procedure."
- "Utilizing [music therapy interventions] to… decrease pain perception."
- "I do not use music as distraction, but rather to move beyond engagement."
- "I attempt to provide patient[s] with opportunities for musical engagement."

The following are examples of utilizing music therapy interventions to address client anxiety. Note how part of addressing client anxiety includes increasing client preparation, increasing client self-efficacy to manage their own pain, and increasing the client's feeling of control:

- "Entrainment [is] used in pre-op sessions to lower anxieties heading into surgery."
- "[I use music therapy to] decrease restlessness and agitation/anxiety."
- "These interventions are used to prepare the patient's mind and body for painful stretching procedures."
- "I used most of these interventions to address mindfulness and to help the patient prepare themselves and practice being mindful before they experience pain."
- [I use music therapy to] induce a sense of calm and assist patients in establishing a feeling of control."
- "I engage the patient in music interventions prior to their experience of acute pain in order to model techniques to use to manage pain."
- "I help provide them with tools that they will need once they are experiencing pain."

- "[I use music therapy interventions per] the assessed need of the client within the treatment timeframe dictated with treatment team's input for transdisciplinary carry over and client self-management goals."

The following are examples of the importance of the iso-principle:

- "The iso-principle is the main intervention used to then move to all other interventions and open the door for person-centered and person-based MT sessions."

- "If the person is anxious, I use the iso-principle to meet and gradually lower anxiety level."

The following are examples of the emphasis on the individualized nature of the music therapy treatment:

- "My interventions are individualized to meet the immediate needs of the client. Music interventions are client-directed and based upon their interests."

- "[I implement music therapy interventions with] patient-preferred music and instrumentation."

- "Treatment is individualized and may integrate any or all of these areas as needed."

In the questionnaire section concerning the use of music therapy and acute pain, participants also indicated whether they use music therapy with clients experiencing acute pain. Out of the 29 participants that answered the question, 28 indicated that they did work with clients experiencing acute pain.

Similarly to participants using music therapy with clients prior to the client experiencing acute pain, 100% of participants (n = 26) indicated that they address anxiety in clients while the client is experiencing acute pain; however, while 92.31% of participants indicated that they address depressed mood in clients experiencing acute pain (n = 24), 7.69% of participants indicated that they do not (n = 2).

The most common goals for the client's music therapy treatment while the client experiences acute pain included "decrease perception of pain," "increase positive coping skills," and "increase relaxation." Other frequently selected goals included "elevate mood" and "increase mindfulness." The least selected goal was "decrease distorted cognitions." Table 10 displays more details on music therapy treatment goals while the client experiences acute pain.

Table 10

Music Therapy Treatment Goals While Client Experiences Acute Pain

Music Therapy Goal	**Frequency**	**Percentage**
Decrease perception of pain	24	96%
Increase positive coping skills	21	84%
Increase relaxation	21	84%
Elevate mood	17	68%
Increase mindfulness	16	64%
Increase emotional expression	14	56%
Increase social support	14	54%
Modify negative beliefs	12	48%
Increase client self-efficacy	10	40%
Decrease catastrophic thinking	9	36%
Decrease distorted cognitions	7	28%
Other[a]	3	12%

[a] Engage the client in musical experience, decrease anxiety, induce sleep, and express spiritual beliefs and values

Participants also selected the kinds of interventions they utilized with clients while clients experience acute pain. Due to an error in the survey, "entrainment" was not included as an option. The most commonly selected intervention was "receptive music listening to live client-preferred music." Other commonly selected interventions included "therapeutic song singing," "improvisation," "music assisted relaxation—guided imagery," "active music making," and "music-assisted relaxation—progressive muscle relaxation." The least utilized

interventions were again “lyric analysis” and “the Bonny Method of Guided Imagery and Music” (see Table 11).

Table 11

Music Therapy Interventions for Clients Experiencing Acute Pain

Music Therapy Intervention	**Frequency**	**Percentage**
Receptive music listening to live client-preferred music	24	96%
Therapeutic song singing	18	72%
Improvisation	17	68%
Music-assisted relaxation—guided imagery	17	68%
Active music making	16	64%
Music-assisted relaxation—progressive muscle relaxation	16	64%
Receptive music listening to recorded client-preferred music	14	56%
Movement to music	11	44%
Songwriting	10	40%
Music-assisted relaxation—autogenic training	7	28%
Lyric analysis	6	24%
The Bonny Method of Guided Imagery and Music	2	8%
Other[a]	2	8%

Note: Due to an error in the survey, “entrainment” was not included as an option.
[a] Participants indicated that other music therapy interventions utilized with clients experiencing acute pain include the iso-principle and music-assisted conversation.

When asked how participants used the interventions above with clients while the client is experiencing acute pain 14 participants answered. From their answers, several themes emerged. The themes were (a) using music therapy interventions to decrease the perception of pain through refocused engagement, (b) using music therapy interventions to increase client self-efficacy, (c) using music therapy interventions to address client emotions, (d) using the structure of the music to support non-musical aspects of the intervention, (e) allowing for client choice in music therapy intervention offerings, and (f) emphasizing the individualized nature of the music therapy treatment.

The following are participant-provided examples of using music therapy interventions to decrease the perception of pain through refocused engagement:

- "Interventions are used to decrease patient's perception of pain during stretching procedures…"
- "I engage patients in active music making as a means of refocusing attention away from pain…"
- "Typically using to refocus patient's attention…"
- "Receptive: I ask the client to listen carefully and to sing or hum along if possible. I typically play guitar and sing at bedside…"
- "…Therapeutic singing: I discuss that music making can sometimes help decrease pain perception, then I sing [patient]-preferred songs, accompanied by my guitar, at bedside. I ask [patient] to sing or hum along. I sometimes leave out a word and pause so [patient] refocuses away from pain and toward the music making…"
- "I engage patients in active music making as a means of refocusing attention away from pain. I find that the longer the patient is actively engaged in the music intervention, the more effective the intervention is for pain management."
- "To help engage the patients' attention and move it away from the pain they are experiencing. I believe in the Gate Control Theory of Pain, as well as the Neuromatrix Model of Pain. These have been very helpful in identifying all that is involved with physical pain. In Gate Control, the music is the positive stimuli that moves to the brain and shuts the gate to the sensation of pain."

The following are examples of using music therapy interventions to increase client-self-efficacy:

- "Interventions are used to… increase efficacy through relaxation."
- "I reinforce what the patient and I worked on before their surgery (surgery usually being the cause of acute pain for which I've seen the patient ahead of time). If I haven't worked with the patient before their acute pain, I will teach the same skills, it's just more difficult because they will not have been able to practice them in the absence of pain."

- "…If a patient expresses a lack of coping/pain management skills, then I might direct them to some form of meditation, breathing exercise, or music guided relaxation."

- "[Music therapy interventions include] initial description of various exercises, brief demonstration of exercises, gradual introduction of client-led sessions, followed by review and suggestions for next session."

- "[I use music therapy interventions to] provide client-driven coping strategies."

The following are examples of using music therapy interventions to address client emotions:

- "Songwriting/Improvisation: I write a song on the spot to address client concerns and suggest hope in the lyrics."

- "[I]f a pt is anxious and experiencing pain, I might build rapport through receptive music listening of a preferred song with content that is more neutral, and transition to a song that might be more emotionally impactful. If there is an emotional response or lessening of anxiety/pain symptoms, I will facilitate a discussion on what was helpful, what the pt was thinking of, how they noticed their body respond, etc., and continue to facilitate interventions appropriately based on their needs and how/if they communicate that MT was beneficial.

- "[I use music therapy interventions to] provide opportunities for self-expression."

The following are examples of using the structure of music to support the non-musical aspects of the intervention:

- "I then provide musical structure on the guitar or another accompaniment instrument to guide the patient from moderate tempo to slow and relaxed tempo."

- "I slow the tempo of the music gradually as we move through the muscle groups…"

- "Typically using [the musical structure] to… encourage[e a] slower breathing pattern."

The following are examples of allowing for client choice in music therapy intervention offerings:

- "If the patient is able to communicate their needs I might allow them to make a choice between a receptive or expressive intervention…"
- "[A session may include an] initial description of various exercises, brief demonstration of exercises[,] gradual introduction client-led sessions, followed by review and suggestions for next session."
- "Give patient the option of which they'd like to try."

The following are examples of emphasizing the individualized nature of the music therapy treatment:

- "After a brief 5-10 minute verbal check-in, I will decide which intervention to implement depending on what the presenting patient needs/concerns are…"
- "There is no one way I use these techniques. It varies from client to client and session to session."
- "[I implement music therapy interventions] in a huge variety of ways as indicated by patient preference and assessment results."
- "Following my initial non-musical assessment, I select the most appropriate intervention(s) to implement with patients based on their primary needs and how it affects or influences their pain."
- "[I handle music therapy interventions carefully], client centered[,] focused on needs and responses to all stimuli and interactions."

Participants also indicated how client pain perception was assessed during and after music therapy treatment for acute pain. The most commonly used way of assessing client pain was "1-10 Numeric Pain Rating Scale" and "physical indications" (see Table 12).

Table 12

Assessment of Pain Perception During and After Music Therapy for Acute Pain

Way Pain is Assessed	Frequency	Percentage
1-10 Numeric Pain Rating Scale	19	76%
Physical indications[a]	15	60%
Physiological indications[b]	9	36%
Wong-Baker FACES Scale	9	36%
Other[c]	6	24%
Visual Analog Scale	5	20%
Brief Pain Inventory	2	8%
McGill Pain Questionnaire	1	4%

[a] Grimace, affect and facial expression, restlessness and body movement, and tension
[b] Moaning and other vocalizations, changes in vital signs including elevated heart rate, blood pressure, and respiratory rate.
[c] Color Analysis Scale (Lowey, 2013), the FLACC scale, pain AD scale, the Critical Care Pain Observational Tool, patient verbal description of pain, and no assessment tool utilized

Section 2: Music Therapy and Chronic Pain

This section of the survey concerned how music therapists practice when working with clients experiencing chronic pain. This section included questions about assessment, timing of treatment, goals, how psychological factors are or are not considered during treatment, and interventions for clients experiencing chronic pain.

The researcher provided the definition of chronic pain and participants indicated whether they worked with individuals experiencing chronic pain. Out of the 34 participants who answered this question, 32 indicated that they did and were permitted to answer the rest of the questions in this section.

Participants indicated the types of music therapy sessions they facilitate with clients experiencing chronic pain. Individual music therapy sessions were the most common (89.29%), while 57.14% indicated that they utilized group music therapy sessions.

Participants selected what they use to assess clients with chronic pain at the beginning of the music therapy treatment. The most commonly-selected assessment was "client-provided pain rating," with 93% of participants selecting that option. Other commonly-selected assessment tools were "current client emotional state," "client medical history," and "physical indications." Participants selected "physiological indications" the least. See Table 13 for further details of what music therapists assess at the beginning of the music therapy treatment with clients with chronic pain.

Table 13

What Music Therapists Use to Assess at the Beginning of Music Therapy Treatment for Chronic Pain

Assessment Area	**Frequency**	**Percentage**
Client-provided pain rating	26	93%
Current client emotional state	24	86%
Client medical history	20	71%
Physical indications[a]	20	71%
Client coping mechanisms	19	68%
Client psychological history	18	64%
Client functional ability	17	61%
Client social supports	15	54%
Client's previous musical experiences	14	50%
Client spiritual supports	14	50%
Physiological indications[b]	11	39%
Other[c]	2	7%

[a] Facial expression, body movement, body posture, tension, and grimace
[b] Vital signs when applicable
[c] Consultation with medical professionals, family members, and patient self-report; pain catastrophizing; kinesiophobia; pain interference; and pain-related self-efficacy

Of the 28 participants who responded to the question asking if they use music therapy to address anxiety in clients experiencing chronic pain, all indicated that they do. Of the

same 28 participants, nearly all indicated that they address depressed mood in clients experiencing depressed mood (n = 27), while one indicated that they did not (n = 1).

When asked to select what is addressed when utilizing music therapy with clients experiencing chronic pain, the most commonly-selected responses were "depressed mood" and "triggers of anxiety." Other commonly-selected responses were "fatigue or loss of energy," "muscle tension," and "loss of interest or pleasure." The least addressed responses were "recurrent thoughts of death," "attitude toward surgery," and "psychomotor agitation or retardation" (see Table 14).

Table 14

Need Areas Addressed in Music Therapy with Clients Experiencing Chronic Pain

Need Area Addressed	**Frequency**	**Percentage**
Depressed mood	26	93%
Triggers of anxiety	25	89%
Fatigue or loss of energy	24	86%
Muscle tension	23	82%
Loss of interest or pleasure	22	79%
Aspects of thinking	21	75%
Diminished ability to think or concentrate	20	71%
Feelings of worthlessness	20	71%
Sleep difficulties (insomnia, hypersomnia, or sleep disturbance)	19	68%
Restlessness	17	61%
Anticipation of future outcomes	16	57%
Self-efficacy	14	50%
Recurrent thoughts of death	11	39%
Attitude toward surgery	10	36%
Psychomotor agitation or retardation	9	32%
Other	0	0%

Participants indicated goals for the music therapy treatment while the client experienced chronic pain. Due to an error in the survey, goals not included as options included "increase mindfulness," "decrease distorted cognitions," and "decrease negative

beliefs." All participants selected "increase relaxation" as a goal. Other frequently selected goals were "increase emotional expression" and increase positive coping skills. The least selected music therapy treatment goal was "decrease catastrophic thinking" (see Table 15).

Table 15

Music Therapy Treatment Goals for Clients Experiencing Chronic Pain

Music Therapy Treatment Goal	**Frequency**	**Percentage**
Increase relaxation	28	100%
Increase emotional expression	26	93%
Increase positive coping skills	26	93%
Decrease perception of pain	24	86%
Elevate mood	24	86%
Increase social support	21	75%
Increase client self-efficacy	17	61%
Decrease catastrophic thinking	13	46%
Other[a]	3	11%

Note: Due to an error in the survey, options for music therapy goals for clients experiencing chronic pain did not include "increase mindfulness," "decrease distorted cognitions," or "decrease negative beliefs."

[a] Increasing mindfulness, decreasing use of opiates, eliminating self-medication for pain, and expressing spiritual beliefs and values

Participants indicated that the most common type of music therapy intervention utilized with clients experiencing chronic pain was "active music making" with nearly all of participants selecting that as an intervention. Other commonly-selected interventions included "receptive music listening to live client-preferred music," "improvisation," and "therapeutic song singing." The least selected interventions were "music assisted relaxation—autogenic training" and "the Bonny Method of Guided Imagery and Music" (see Table 16).

Table 16

Music Therapy Interventions Utilized with Clients Experiencing Chronic Pain

Music Therapy Intervention	**Frequency**	**Percentage**
Active music making	27	96%
Receptive music listening to live client-preferred music	24	86%
Improvisation	23	82%
Therapeutic song singing	22	79%
Songwriting	20	71%
Entrainment	18	64%
Music assisted relaxation—progressive muscle relaxation	18	64%
Lyric analysis	17	61%
Music-assisted relaxation—guided imagery	17	61%
Receptive music listening to recorded client-preferred music	17	61%
Movement to music	14	50%
Music-assisted relaxation—autogenic training	10	36%
Other[a]	4	14%
The Bonny Method of Guided Imagery to Music	2	7%

[a] A free-response space was provided for participants to record what other interventions they utilize with clients experiencing chronic pain; no participants elected to write in responses.

When asked how participants used the interventions above with clients experiencing chronic pain, 17 participants answered. From their answers, several themes emerged. The themes were (a) emphasizing client choice, (b) using music therapy interventions to increase client self-efficacy, (c) using music therapy to address psychological and emotional areas of the client's life, and (d) emphasizing the individualized nature of the music therapy treatment for pain.

The following are examples of emphasizing client choice:

- "Therapist and patient discuss patient's needs and desired outcomes as well as the available techniques. Patient may select a particular technique or therapist may recommend based upon patient preferences and physical status."
- "Give [patient the] option to choose from which intervention they want to try."

The following are examples of using music therapy interventions to increase client self-efficacy:

- "I believe that active music making is most helpful in decreasing the perception of pain, increasing self-efficacy, improving autonomy and mood states, and providing opportunity for a positive experience."

- "I meet with patients on a regular basis, model each intervention for the patient, teach the patient how to use the intervention, and then provide the patient with the resources to use the intervention at home."

- "[During music therapy sessions, I am] assessing for pain as session progresses, providing education on using the techniques in the future when MT-BC is not able to be present."

The following are examples of using music therapy to address psychological and emotional areas of the client's life:

- "…Occasionally, I will use the [iso-prinicple] to bring energies up in a depressed room, gradually increasing the musical energy or lyric intensity to get them to talk, open up."

- "Receptive music listening recorded—recorded music allows for a safe container for therapeutic conversation and emotional expression with the MTs full attention. Lyric analysis [is] used [with] a broad range of chronic pain patients, which usually leads to song writing. Several of my less socially secure chronic patients rely on this to express their feelings indirectly, though most are quite conscious and particular in their song selections."

- "Active music making is used… as a way to improve mood and decrease fatigue."

The following are examples of emphasizing the individualized nature of the music therapy treatment for pain:

- "…There is no one way that I use these experiences. I respond to the client and to their individualized needs."

- "Depending on patient or group needs, I will decide which intervention to implement."

- "[I base music therapy interventions] on individual preferences/needs within the group."

- "[Music therapy interventions are] based on the make-up of the group—age, abilities, preferences."

Participants selected how they address pain perception during and after music therapy treatment for clients with chronic pain. The most common answer was "1-10 Numeric Pain Scale." Participants also reported using "physical indications" and "physiological indications" when applicable (see Table 17).

Table 17

Pain Assessment During and at the End of Music Therapy Treatment for Chronic Pain

Assessment Area	**Frequency**	**Percentage**
1-10 Numeric Pain Scale	21	75%
Physical indications[a]	19	64%
Physiological indications[b]	11	39%
Other[c]	7	25%
Visual Analog Scale	5	18%
Brief Pain Inventory	3	11%
Wong-Baker FACES Scale	3	11%
McGill Pain Questionnaire	2	7%

[a] Facial expression, body language, self-adaptation, postural issues, affect, level of involvement in intervention, and tension
[b] Sobriety, abstinence from use of addictive substances, vital signs when applicable, and health-related quality of life
[c] Pain Assessment in Advanced Dementia Scale; the Face, Legs, Activity, Cry, Consolability Scale; the Color Analysis Scale; the Tampa Scale for Kinesiophobia; the Patient Self-Efficacy Scale; client self-report; client mandalas; and other areas of client life such as sleep, fatigue, pain, and catastrophizing

Section 3: Open-Ended Questions

Open-ended questions provided an opportunity for participants to provide more detail about their use of music therapy with individuals in pain. This also gave participants an opportunity share their thoughts on using music therapy for acute pain and for chronic pain,

as well as cite examples from their clinical work. Several themes emerged from the responses.

Thoughts on acute pain and music therapy. The first open-ended question concerned the respondents' thoughts on using music therapy with individuals experiencing acute pain. The 14 participants who answered this question gave answers that led to several themes (a) pain is multidimensional and each person's pain is different, thus individualized treatment is required, (b) clients find pain uncomfortable, and this can affect the client's coping and music therapy treatment, (c) conceptualizing the treatment of acute pain, and (d) how participants conceptualize current and future music therapy research for acute pain.

The following are examples of how, as every pain is multidimensional and different, individualized music therapy treatment is a requirement when working with individuals with acute pain:

- "Acute pain should be looked from the total pain concept, as well as the neuromatrix model of pain. Physical pain may also have components of emotional, spiritual, existential, and mental pain. Social factors and pain perception also play a role in how the patient interprets his/her pain and copes with it."
- "I think the therapist should always allow the patient to express their concerns and gather as much background information concerning the origin of pain, coping skills, etc."
- "Pain and its many levels require in the moment, individualized focus on the patient's report. There is no formulaic answer to how to treat pain."
- "Music therapy interventions need to be tailored to patient's preferred music. MTs cannot exclusively rely on classical and/or new age selections."

The following are examples of how clients find pain uncomfortable and how this can affect the clients themselves as well as the music therapy treatment:

- "Very often during sessions, acute pain is treated with medication. There is a fear and uncertainty about using music therapy because the patient and family want to be rid of pain right away."

- "[Many] patients decline MT services BECAUSE of their pain; they claim they are in too much pain to participate. [It] is difficult to educate and advocate for the efficacy of MT in this situation when patient's focus is on their acute pain."

- "I will occasionally include various pulmonary exercises to music to help with relaxation if the patient has 10/10 pain and is unable to concentrate on other therapeutic goals (ex: physical or cognitive goals)."

- "Most individuals I see that have chronic pain I see primarily because of addiction because of maladaptive coping with pain through abuse of pain medications, heroin, or other substances."

The following are examples of how participants conceptualize the treatment of individuals with acute pain:

- "With acute pain I am more focused on pain relief and comfort with psychological/emotional needs being secondary."

- "I find that active interventions are more effective than passive interventions."

The following are examples of how participants conceptualize current and future music therapy research for acute pain:

- "I believe in consulting the music therapy literature for effective interventions that have been studied in randomized controlled trials. For example, the Gutgsell study published in the *Journal of Pain and Symptom Management*."

- "I am always interested in further research on music therapy in the perception and management of pain and ways to educate other professionals on the role of music therapy."

- "Hope to see other clinicians encourage music therapy intervention for treatment of pain."

Thoughts on chronic pain and music therapy. The second open-ended question concerned the respondents' thoughts on using music therapy with individuals experiencing chronic pain. The 14 participants who answered this question gave answers that led to

several themes: (a) music therapy with individuals with chronic pain can and should include coping strategies and increasing client self-efficacy, (b) music therapy with clients experiencing chronic pain has more of a psychological and emotional component than music therapy with clients experiencing acute pain, and (c) music therapy can be effective with the emotional components of chronic pain.

The following are examples of how music therapy with individuals with chronic pain can and should include coping strategies and increasing client self-efficacy:

- "Similar to my comment above with the addition of more psycho-education on chronic pain and the brain. How pain alters the brain and possibly discussion of how music can alter the brain and perception of pain. I would also discuss how to use pre-recorded music at home as a motivator and a way to relax."

- "[Music therapy can] be an effective strategy for teaching coping skills…

- "More MTs need to focus on providing services for outpatients and providing strategies that can be adapted for use at home. More research is needed utilizing measures of pain interference, coping skills, and function rather than pain intensity."

- "The most important thing to keep in mind when working with clients with chronic pain is that this goal should not be to reduce pain intensity per se. Instead, the goal should be to help patients better manage their pain by helping them relate to their body in a positive, accepting manner, learn new coping strategies, improve their energy levels and motivation for activity/exercise, enhance social support, enhance awareness/reflection re: the meaning of their pain behaviors and related thoughts…"

The following are examples of music therapy with clients experiencing chronic pain having more of a psychological and emotional component than music therapy with clients experiencing acute pain:

- "With chronic pain, I tend to give more focus on psychological/emotional outcomes than with acute."

- "I typically observe that chronic pain is more often accompanied by psychosocial issues than acute pain. Feelings of guilt, shame, anxiety,

frustration, etc. because medical professionals "don't listen," "don't believe" or the pt has chemical dependency. I have observed instances where cathartic release and alleviating psychosocial symptoms can greatly benefit pain management and educate the patient(s) on positive coping mechanisms for managing their pain more long-term."

- "… Patients with chronic pain have been living with it for a long time, and they often cannot believe that anything will help them, let alone music therapy. Therefore, it may take more convincing, as well as more time to make progress."

- "…For many of the patients and caregivers, emotional pain is chronic for them throughout their medical journey and beyond in the case of a death."

The following are examples of how music therapy can be effective with the emotional component of chronic pain:

- "[Music therapy can] …increase positive feelings of self and self in the world."

- "My chronic pain patients come in a wide variety but I've seen [music therapy] help all of them I've come in contact with: Cancer, Transplant, Cystic Fibrosis, Gastro-intestinal, Pre/Post Surgery. They've almost exclusively expressed how much music has meant to them and their pain management, emotional expression, anxieties, depression, among others upon discharge."

- "…Through music improvisations, song writing, group music making, etc. clients can begin to rewrite their pain/illness narrative into a narrative of hope and motivation."

Personal experience using music therapy with clients experiencing acute pain.

The questionnaire also provided participants with the opportunity to share personal clinical experiences of using music therapy with clients experiencing acute pain. The following are a few of those experiences:

- "I had a patient, 'John,' who was a hardened biker diagnosed w[ith] cancer, high anxieties and depression. He was one of my first live music biopsies but, afterward he was so hyped that I learned 6 songs for his biopsy, he didn't even express pain and barely acknowledged the doctors once the procedure was over. He just kept singing one of the Neil Young songs I learned for the procedure and saying what a great song that was and how it 'took him back'...and clearly took him away from his procedure and his pain."

- "Middle-aged woman, post-surgery with acute pain and severe drainage/wound vac – wound had difficulty healing that required extended stay followed by outpatient rehab. Though I had multiple sessions with this pt, I will only discuss one instance. Upon arrival pt was very tearful due to pain. Pt initially refused, stating they were in so much pain "they wouldn't be able to enjoy it" but agreed to session following brief education on benefits of MT for pain management. Pt followed prompts to regulate breathing, close eyes, and listen to music, which was pt-preferred and matched to their behavioral and physiological state. Following a few minutes of continuous music, pt reported lower but still severe pain levels. Pt contributed to guided imagery landscape by discussing favorite place, sights, sounds, etc. MT used music to match pt's behavioral state and verbally dictated improvised imagery landscape based on pt input. Verbal prompts were transitioned to humming and a related song (similar themes to favorite place) and by session end, pt was asleep."

Personal experience using music therapy with clients with chronic pain.

Participants were also provided the opportunity to share personal clinical experiences of using music therapy with clients experiencing chronic pain. The following are a few of those experiences:

- "A young adult CF [cystic fibrosis] patient, "Zoe," used songwriting for the first time w[ith] me to express her emotion about her chronic pain. She has since written almost enough songs (8 at last count) for an album she is considering making. A testament to the intervention's power in the hands of a dedicated user. She'll occasionally visit my office after her doctor's appointments and present me w[ith] lyrics, and we'll spend a few minutes w[ith] her phone recording some guitar progressions and possible melodic structure to her written word. I get an immediate referral each time she is admitted for a 'tune-up' and we continue the process and record the finished songs in Garage Band."

- "Middle-aged male, chemically dependent for a few years on prescription pain killers following an injury causing chronic pain. Initially upon introduction, pt stated they were interested and would love to but were terribly busy calling the insurance company and asked for me to return later. Pt appeared anxious and did report a high level of pain in neck and back. Same thing happened a second time. The third time, pt stated their child plays guitar and they were unsure how they (pt) would emotionally react to music. Symptoms of anxiety such as wringing hands, tight shoulders, and biting lip were evident. I educated the pt on MT training and that I could try one thing - leading through guided relaxation process - and pt agreed. I did not even bring the guitar into

the room but utilized voice and rhythmic stimuli (patting/tapping my legs) to facilitate guided relaxation, cuing pt to breathe, hold, release, paired with progressive muscle relaxation. Pt stated their pain level went from 10/10 to 3/10 by the end of the session and enthusiastically agreed to follow up. In a follow-up session the pt agreed to the use of guitar and session followed a similar format just with harmonic parallel creating tension and release. Pt stated guitar greatly enhanced experience and stated[,] 'I wish I hadn't refused you that first time, I wish I had been doing this all along.'"

- "[A client] in recent memory enjoyed very much picking extremely vulgar or profanity laden songs to express his anger at his disease (CF) but also at nurses and staff that he blamed a lot of his pain on. It helped him handle it in healthier ways that didn't place him under 'care contracts' for behavioral issues and language [with] staff."

Chapter 5

Interview Results

This chapter will report the results of the three interviews conducted with board-certified music therapists who work with clients experiencing pain and who indicated on the *Pain, Music Therapy, and Psychological Factors Questionnaire* that they were willing for the researcher to interview them. All interviewees chose to have their names disclosed in this study.

The first interviewee, Lisa Gallagher, is the Research Program Manager for the Arts and Medicine Institute at the Cleveland Clinic and has 26 years of clinical music therapy experience, 22 of which have been with individuals with pain. While she works with both individuals experiencing acute pain and individuals experiencing chronic pain, she works more with individuals experiencing chronic pain. Her understanding of pain and music therapy has come from continuing education, reading, research, professional experience, and her own personal experience with chronic pain.

The second interviewee, Kathy Jo Gutgsell, is a music therapist at University Hospitals Cleveland Medical Center and has 21 years of clinical music therapy experience. Prior to working as a music therapist, she worked as a registered nurse for 24 years. She primarily works with individuals experiencing acute pain. Her understanding of pain and music therapy has come from professional experience, running controlled trials, reading journals, and discussing the experience with her clients.

The third interviewee, Noelle Pedersen, is Director of Education, Training, and Supervision at MusicWorx Inc. and Resounding Joy Inc., and as part of those companies, practices music therapy at Scripps Health. She has completed additional training in music

therapy for premature and medically fragile newborns and has 10 years of clinical music therapy experience, all of which have been with both individuals experiencing acute pain and individuals experiencing chronic pain. She currently works with both individuals experiencing acute pain and individuals experiencing chronic pain. Her understanding of pain and music therapy has come from reading research studies utilizing music therapy interventions, interventions from non-music therapy pain literature, her own experience, and her education.

The questionnaire invited interviewees to answer questions about their music therapy work with individuals experiencing pain. Questions concerned the clinical decision-making progress when working with individuals experiencing pain; if, how, and when depression and anxiety are addressed with clients experiencing pain; and how the difference between using music therapy to treat individuals experiencing acute pain and individuals experiencing chronic pain is conceptualized.

Research Question 1: Do music therapists address client depression when working with individuals experiencing acute pain? If so, at what point in the acute pain process is depression addressed? How is depression addressed in terms of assessment, treatment goals, and interventions?

The first research question examined if, when, and how music therapists address client depression when working with individuals experiencing acute pain. Several questions in the interview addressed this. Gutgsell and Pedersen indicated that while they may address client depression if it is appropriate, their primary focus while the client is experiencing acute pain is decreasing pain perception. Additionally, both assess depression in individuals experiencing acute pain through assessment questions and nonverbal communication. The

interviewees expressed slightly different ways of addressing depression: Gutgsell indicated that she tends to focus on active interventions to engage the client, while Pedersen indicated that her interventions depend on the prognosis of the acute pain. Both interviewees expressed that they find treating depression in individuals experiencing acute pain to be more difficult than treating anxiety in individuals experiencing acute pain.

Gutgsell indicated that she addresses client depression when working with individuals experiencing acute pain. As part of her assessment, she reported that she asks the client, "What is the most troublesome thing right now in this moment, and how can I be helpful?" She estimated that since, for about 95% of the time, the client indicates that the pain is the most pressing issue, she addresses pain perception as opposed to emotional or psychological need areas, such as depression. This was a sentiment shared by Pedersen who said, "Usually, pain takes precedence over most other goals because if they can't focus on anything because of the pain, then we can't address anything." Similarly, Gallagher indicated that when she works with clients experiencing acute pain, she focuses on the pain in the moment, carrying her own understanding into the treatment process that the client's pain will go away eventually.

If a client appears depressed, Gutgsell said that she asks them directly if the client thinks they may be depressed. Similarly, Pedersen said that, while she can sometimes tell a client is depressed by how they answer her assessment questions, she sometimes cannot if the client presents with a blank affect. Thus, she asks the client to describe their mood and formulates goals and interventions based on what the client says and needs. She again emphasized how, while depression may be exacerbating the pain at the time, the clients usually desire to focus on decreasing the perception of pain before focusing on other areas.

If the client indicates that they are depressed, Gutgsell expressed that she would mostly likely offer more active interventions such as songwriting or instrument playing. She remarked that she has found that the act of expressing and engaging in something like songwriting or instrument playing can energize and enable the clients, lifting them out of a depressed mood.

For Pedersen, the kind of interventions to address depression in clients experiencing acute pain comes from the prognosis of the pain. If the pain is short-term (for example, post-surgical), the focus is on decreasing the pain. If the client's pain is short-term, under control, and the client indicates that they are experiencing depression, the focus becomes increasing and strengthening client coping mechanisms and identifying outside resources for the client.

Long-term emotional components wrapped into the pain mean that the focus shifts. Pedersen works on both a trauma unit and an oncology unit and described that the client's emotional reactions and anticipatory grief from events such as learning the client has a terminal illness or learning that they may not walk again become the focus rather than the pain being the focus. Consequently, Pedersen then uses interventions that have a more psychoanalytic basis such as songwriting, lyric discussion, improvisation, and art and music, to look at sources of the pain that are more emotional, eventful, and spiritual rather than just physical.

Gutgsell did indicate that depression can be more challenging to address than anxiety in clients experiencing acute pain. She has found that clients are not as forthcoming about discussing depression, and that instead, she relies on more subtle indications, such as affect. Pedersen also expressed that depression can be more challenging to address in clients experiencing anxiety, partly because depression is less understood by clients than anxiety.

Research Question 2: Do music therapists address client anxiety when working with individuals experiencing acute pain? If so, at what point in the acute pain process is anxiety addressed? How is anxiety addressed with individuals experiencing acute pain in terms of assessment, treatment goals, and interventions?

The second research question examined if, when, and how music therapists address client anxiety when working with individuals experiencing acute pain. Several other questions in the interview also addressed this concept. All interviewees indicated that they address anxiety in individuals experiencing acute pain, and all indicated that they address anxiety at the beginning of the music therapy treatment process. Since pain and anxiety tend to be circularly causal and since clients desire to decrease their pain perception, state anxiety is addressed as a means of lowering pain perception. Gutgsell and Pedersen described utilizing similar interventions consisting of relaxation techniques and guided imagery and music to address anxiety in individuals experiencing acute pain. If the client reaches a place where their pain is manageable and they can concentrate on other things, Pedersen said that she may address trait anxiety at that point if appropriate.

Both Gutgsell and Pedersen address anxiety with clients experiencing acute pain. Both tend to meet their clients experiencing acute pain while the pain is occurring. To assess client anxiety, Gutgsell reported asking the client, "What is the most troublesome thing right now in this moment, and how can I be helpful?" If the client reports worry or anxiety or exhibits anxious body language, Gutgsell focuses on those client needs. As part of her assessment questions, Pedersen asks the client their pain level and their anxiety level and, if appropriate, addresses the anxiety. Pedersen also noted that over the past ten years, clients have come to understand what "anxiety" means and feel more comfortable sharing that they

are experiencing it; while she used to ask for stress level, she now finds she can ask about their anxiety level and get accurate answers.

Gutgsell noted that in her research study, she found that as the pain of her clients decreased, their tension decreased and relaxation increased as well. She described how this helped her understand how anxiety was a part of the whole experience of pain. Thus, even when she implements interventions addressing pain perception, she also addresses anxiety because of the intertwined relationship of pain and anxiety. Pedersen also described this relationship, noting that she is often referred to people who have both pain and anxiety. She stated that she finds that the two spearhead each other in a vicious cycle, which is why, during her assessment, she asks the clients for both their pain and anxiety levels.

Gutgsell, Gallagher, and Pedersen described their similar music therapy treatment goals for individuals in pain. All indicated that with clients experiencing acute pain, decreasing pain perception tends to be the first and foremost goal. When Gutgsell works with clients experiencing acute pain, she has them select the goal on which they want to work. She estimated that about 95% of the time, it is decreasing pain perception. Similarly, when Gallagher reported that when she works with clients experiencing acute pain, she acknowledges that it is pain that will go away, and her focus in that moment is on decreasing the perception of pain.

However, Gutgsell noted that since pain and anxiety are circularly causal, anxiety might be decreased by the decrease of the anxiety-provoking stimulus. Gallaher echoed this thought, noting that anxiety and pain often go hand-in-hand. Similarly, Pedersen described how the client's pain, and consequently state anxiety, must be under control before

addressing trait anxiety. Once the pain is decreased, Pedersen said that she might focus on helping the client increase their self-efficacy to manage their pain at home.

For clients experiencing state anxiety, Gutgsell and Pedersen utilize similar music therapy interventions. Gutgsell often utilizes the intervention she examined in her research study, consisting of instructing the clients in a verbal autogenic relaxation with a focus on breathing followed by guided imagery supported by an ocean drum or harp. Gutgsell remarked that part of the success of the intervention is due to the aesthetic quality of the ocean drum and the harp. For clients experiencing short-term state anxiety, Pedersen said that she utilizes guided imagery and breathing as well, aiding the client in creating a place that is beautiful and healing, eliciting details from the client that engage all the senses, then adding live guitar music as she guides the client in experiencing that place in their imagination.

Once the client's pain and state anxiety have decreased, Pedersen said that she may also discuss with the client how they can do something similar at home. She brings a psychoeducation piece to the session to describe the how and the why of the relaxation to the client. She also shares how similar meditations and relaxations can be found online on sites like YouTube to further increase client self-efficacy after discharge.

Research Question 3: Do music therapists address client depression when working with individuals experiencing chronic pain? If so, at what point in the chronic pain process is depression addressed? How is depression addressed with individuals experiencing chronic pain in terms of assessment, treatment goals, and interventions?

The third research question examined if, when, and how music therapists address client depression when working with individuals experiencing chronic pain. Several other

questions in the interview also addressed this concept. Gallagher and Pedersen indicated that they address depression in individuals experiencing chronic pain, and they indicated that they do so when they become aware it is a need area. Their ways of assessing, treating, and utilizing interventions were also similar: both assess depression in clients experiencing chronic pain with verbal questions and observations of nonverbal communication, both focus on expressing emotional pain and increasing coping skills, and both tend to utilize active music therapy interventions. Gallagher differed from Pedersen in that she emphasized a psychoeducation piece of the music therapy treatment, as well as sharing with the clients the rationale for using interventions.

Gallagher works primarily with clients experiencing chronic pain and addresses depression with her clients as soon as she is aware it is a need area. Gallagher described using the neuromatrix and biopsychosocial models of pain, which inform her understanding that, for clients experiencing chronic pain, many other factors influence the chronic pain experience (Melzack, 1999). As such, she reported, sometimes these factors, such as depression, need to be addressed before the pain itself can be addressed.

To assess depression in individuals experiencing chronic pain, Gallagher reported that as part of her assessment at the beginning of the individual music therapy session, she asks the client to rate both their pain and their mood. At the end of the session, the client is invited to rate their pain and mood again. Additionally, Gallagher indicated that she also uses a behavioral observation scale that includes qualitative data such as affect. Similarly, when Pedersen works with individuals experiencing chronic pain, she said that she asks clients to rate their pain, describe it, and, if she feels it is appropriate, describe their mood.

Additionally, Pedersen also reported that she listens for indications of depression such as the client saying that they do not enjoy activities they used to enjoy.

Gallagher said that if she perceives that the client may be experiencing depression, she addresses it at the beginning of the music therapy treatment. She sometimes does this by pointing it out to her client if they do not recognize it, and sometimes by carrying out an intervention, then asking the client to again rate their mood at which point, "the lightbulb goes off for them." Pedersen described how, since depression is not as normalized or understood as anxiety is, clients may be experiencing depression without their awareness. This is where listening for client language and determining client function regarding depressive symptoms is important, Pedersen indicated. It is more about the effect of depression on client function than the word "depression" itself.

When working with clients experiencing chronic pain and depression, Gallagher described how understanding the total pain concept has informed her understanding of addressing depression in clients experiencing chronic pain. Working through emotional pain and depression may be the focus for clients with chronic pain since depression can affect the perception of chronic pain. Likewise, Pedersen said that for individuals who are experiencing grief, such as anticipatory grief from loss of function, the focus of the music therapy treatment becomes helping the client work through those emotions. Gallagher also said that one of the goals of the music therapy treatment consists of giving clients ways of coping with the experience of chronic pain and helping clients foster hope in the midst of chronic pain. Pedersen also emphasized coping skills, indicating that the goals of music therapy treatment for individuals with chronic pain may include increasing coping mechanisms or identifying and utilizing outside resources.

Regarding interventions used to address depression in clients experiencing chronic pain, Gallagher expressed how she uses more active interventions that require engagement to help the client express what they are experiencing. Of course, the intervention utilized depends on what the client desires, Gallagher said. When describing active interventions, she included active music making, therapeutic singing, lyric discussion, and song writing as potential examples. Gallagher added that active interventions can also assist the clients in communicating something they want other people to know. Pedersen had a similar response, saying that for emotional pain such as anticipatory grief, she utilizes songwriting, lyric discussion, and improvisational playing to "ge[t] them to make music, fill their body with music."

Gallagher pointed out a difference when addressing depression in individuals experiencing chronic pain versus individuals experiencing acute pain. She talked about how part of her approach includes a psychoeducational piece about pain, including the Gate Control Theory of Pain (Melzack & Wall, 1965). She said that she discusses with the clients how many factors can affect their pain, and that she explains to the client the rationale behind the interventions she utilizes.

Research Question 4: Do music therapists address client anxiety when working with individuals experiencing chronic pain? If so, at what point in the chronic pain process is anxiety addressed? How is anxiety addressed with individuals experiencing chronic pain in terms of assessment, treatment goals, and interventions?

The fourth research question examined if, when, and how music therapists address client anxiety when working with individuals experiencing chronic pain. Several questions in the interview addressed this concept. Gallagher and Pedersen indicated that they address

anxiety in individuals experiencing chronic pain as soon as they are aware it is a need area. Their assessment, treatment goals, and music therapy interventions with individuals experiencing chronic pain were also similar: both use client self-report of anxiety and pain and nonverbal communication to assess, both focus on helping the clients increase their coping skills to use at home, and both utilize guided imagery to music. Gallagher also emphasized the more didactic piece of music therapy treatment for anxiety in individuals experiencing pain.

Both Gallagher and Pedersen address anxiety in clients experiencing chronic pain. Both also expressed how intertwined anxiety and pain are—they spearhead each other. Consequently, Gallagher and Pedersen described how a client might be referred to them for pain management, but anxiety is a contributing factor to their pain, or they may be referred for anxiety because it is affecting their pain. As soon as Gallagher and Pedersen assess the client and determine that it is an appropriate goal area, they address the client's anxiety.

Assessing for anxiety in individuals experiencing chronic pain is similar to assessing for depression. Gallagher shared that she asks clients to rate their pain, their mood, and their anxiety at the beginning of the music therapy session. She also reported using the behavioral scale of observations previously mentioned to look for physical symptoms of anxiety such as agitation or tenseness. Pedersen described a similar process of asking the clients to rate their pain and their anxiety, then determining whether anxiety should be a focus of the music therapy treatment based on that.

Once a music therapist identifies anxiety as a need area in a client experiencing chronic pain, Gallagher shared that the ultimate goal of the music therapy treatment is to provide the clients skills to hopefully help them to be able to stay out of the hospital or not

see their doctors as frequently. In doing so, the music therapy treatment also provides hope for the clients. Pedersen said that she also focuses on helping clients increase their skills to decrease their own pain perception. Again, since anxiety spearheads pain and vice versa, doing so can help break that cycle.

To address anxiety in individuals experiencing chronic pain, both Gallagher and Pedersen described using receptive music therapy interventions. Gallagher described how imagery and relaxation techniques tend to be the interventions she utilizes; Pedersen indicated guided imagery and breathing techniques. Both music therapists carry out the intervention in a similar way: they have the client build a calm, beautiful, healing place and ask the client to describe the place. They ask the client questions about the place that elicit the senses—asking what the place looks like, smells like, feels like; if appropriate, asking what the client tastes or hears. After receiving as much description as possible, Gallagher said that she teaches the clients relaxation techniques. Similarly, Pedersen said she leads the client in a guided breathing. Both Gallagher and Pedersen then guide the client based on the details elicited from the client. Gallagher said that she sometimes does this while playing live music and sometimes uses recorded music; Pedersen indicated that she tends to utilize live guitar music and vocals. Gallagher and Pedersen also said that if the client finds the intervention successful, they will record it for the client so that the client can use it when the music therapists are not around.

While the intervention to address anxiety in individuals experiencing chronic pain may seem similar to ones used to address anxiety in individuals experiencing acute pain, Gallagher noted a significant difference. She said that with clients experiencing chronic pain, she spends more time teaching the pain management techniques and educating the

client on how to use the techniques at home. As part of the education piece of working with individuals experiencing chronic pain, Gallagher indicated that she also teaches the clients about the Gate Control Theory of Pain and explains further about the rationale behind the interventions.

Pedersen said that a challenge she faces while working with individuals experiencing chronic pain is that they are used to the pain and nothing helping it. Thus, they are more likely to decline music therapy services because they do not believe anything will be able to ameliorate the pain; however, Pedersen indicated that individuals experiencing chronic pain might agree to music therapy services because they enjoy music. After noticing the clients relaxing after playing a few songs, Pederson said that she might then introduce the idea of an intervention to address pain and anxiety. Pedersen said that at this point, the clients usually will give the intervention a try.

Research Question 5: How do music therapists view the treatment of acute pain and chronic pain using music therapy?

The fifth research question examined how music therapists view the music therapy treatment of individuals experiencing acute pain and individuals experiencing chronic pain. Several questions in the interview addressed this concept. All three music therapists expressed similar thoughts on how they view the treatment of pain and chronic pain using music therapy. Gutgsell said that she views chronic pain as more difficult to treat because the individuals are discouraged and feel as though nothing will help with it, whereas acute pain is more in-the-moment, address the problem as it is now and see results now. Pedersen described how acute pain lasts a relatively short amount of time and affects an individual's functionality during that time, but that due to chronic pain's pervasiveness, it affects an

individual's functionality on several levels including emotional, psychological, and spiritual. Like Gutgsell's observation, Pedersen also noted how individuals experiencing chronic pain tend to also doubt that anything will help with their pain, including music therapy. Gallagher noted that her approach with individuals experiencing chronic pain is different than her approach with individuals experiencing acute pain in that she thinks more holistically and utilizes the total pain concept, neuromatrix model of pain, and the biopsychosocial model when working with individuals experiencing chronic pain. As such, Gallagher observed that chronic pain will not easily go away, and many other factors affect the pain.

All three interviewees also discussed their experience with and appreciation for integrated care as a way of treating individuals experiencing pain. Pedersen shared how she has felt like an appreciated and well-utilized member of the treatment team consisting of doctors, nurse practitioners, music therapists, healing touch practitioners, and other helping professionals. Gutgsell shared that her clients who view the treatment of pain in a holistic way tend to be more open to using music therapy as an alternative or adjunct treatment for pain. Gallagher described how an oncologist where she works has referred clients to her for pain relief because the oncologist understood how emotional pain affected the clients' physical pain, and the oncologist believed that music therapy could help. Additionally, Gallagher said that she has even used aspects of the integrated care where she practices for her own pain relief, sharing a story about her own experience receiving reiki treatment.

Finally, two of the interviewees discussed how their own personal experiences have helped inform their understanding of the treatment of pain. Gallagher shared that she has chronic pain, and that her experience dealing with it has impacted how she views pain. Specifically, Gallagher said that having chronic pain has made her more compassionate

towards her patients and that she has a better understanding and appreciation for the concept of pain being what a person says it is. She indicated that she also has used the interventions she implements with clients experiencing pain for herself when she experiences pain.

Gutgsell's personal experience in relation to her work was different than Gallagher's experience; however, her experience still affected the way she approaches and understands pain. As a registered nurse, Gutgsell saw clients experiencing pain nearly every day. Since pain is a significant concern in nursing, Gutgsell said that she became sensitized to it through her years of practice. Consequently, when she became a music therapist, she described how she felt that same pull towards helping people who hurt because of that sensitization caused by her personal experience in the field.

Summary of Interviews

All three of the interviewees work with clients experiencing acute pain, although one of those three works primarily with clients experiencing chronic pain. The interviewees indicated that they address depression as soon as they realize it is a need area. This can be difficult as depression tends to be less understood compared to anxiety and clients tend to avoid discussing depression. They assess depression in clients experiencing acute pain through assessment questions and nonverbal communication. Treatment goals tend to be focused on what the client needs or wants to discuss; decreasing pain perception tends to take precedence over addressing depression, and addressing depression becomes a secondary goal. If the pain is under control, they use active interventions to engage the client in expressing themselves. If the pain has a long-term prognosis, the interventions may have more of a psychoanalytic component.

The interviewees all indicated that they address anxiety in clients experiencing chronic pain. Since pain perception tends to be the focus of music therapy treatment for clients experiencing acute pain and since pain and anxiety have a circularly causal relationship, anxiety is often the first thing they address. All three assess anxiety by asking the client's anxiety level and observing client body language. The goal for music therapy treatment to address anxiety in individuals experiencing acute pain is to decrease the perception of pain and decrease anxiety. Interventions include more passive music therapy interventions such as relaxation techniques and guided imagery and music.

The two music therapists who often work with clients experiencing chronic pain indicated that they address depression in clients experiencing chronic pain as soon as they are aware it is a need. They assess depression in clients experiencing chronic pain by asking for a verbal rating of mood, utilizing a behavioral observation scale, and listening for answers that indicate depressive symptoms when the client talks. Goals for clients experiencing both depression and chronic pain include fostering hope and increasing coping skills. Interventions to address depression often include a psychoeducational aspect and tend to be active to help the clients express what they are experiencing. Rationale for the interventions is also often part of the treatment process.

The two music therapists who often work with clients experiencing chronic pain also indicated that they address anxiety. They address anxiety as soon as the music therapist is aware it is a need area. Assessment consists of client self-report of anxiety and observation of client body language. Treatment goals include helping the clients increase their coping skills to use at home. Interventions have a teaching aspect to them as the passive relaxation

exercises can not only decrease anxiety in the moment, but they may also be utilized by the clients at home to manage their pain there, thus increasing their coping skills.

All three music therapists interviewed expressed similar thoughts on using music therapy to address pain. Since acute pain lasts a short amount of time, the focus of music therapy treatment with clients experiencing acute pain is to decrease the pain perception so that the client does not hurt. This contrasts with the treatment of clients with chronic pain. Since chronic pain is not something that will go away and since many other factors affect the perception of chronic pain, there is more of a psychological component to using music therapy with clients experiencing chronic pain. Since pain is multidimensional, integrated care and treatment teams can be an effective way to address pain. Additionally, just as each pain is different and depends on what the client experiences, so, too, is how music therapists perceive pain—each brings their own personal experience and understanding to conceptualizing and treating clients who are experiencing it.

Chapter 6

Discussion

This chapter integrates the findings of the music therapy survey and the information provided by the interviewees. This information is intended to explore how and when music therapists address anxiety and depression in individuals experiencing pain and how music therapists perceive the differences between using music therapy with individuals with acute pain and individuals with chronic pain. It begins with a discussion of each research question and a review of the results from the survey. Elaboration provided by the interviews will be presented as well. Recommendations for clinical practice will then be shared. This will be followed by limitations of the study and implications for further research.

Do music therapists address client depression when working with individuals experiencing acute pain?

Results of this study indicate that some music therapists address client depression when working with individuals experiencing acute pain. When using music therapy as a prophylactic measure prior to the client experiencing pain, music therapists address depression; however, while the client is experiencing acute pain, results from the survey as well as statements during the interviews indicate that decreasing the perception of pain becomes the primary focus of the treatment instead of working through depression. This accounts for the decrease in percentage of music therapists working with individuals in pain who address depression before the acute pain event versus the percentage of music therapists working with individuals in pain who address depression while the individual is experiencing acute pain. This is consistent with the pain literature suggesting that the primary goal of treatment is to decrease the perception of pain so that the body can rest and heal (Ramthel,

2012). Further, as was reflected in both the free responses in the survey and in the interviews, pain is such an overwhelming stimulus that it prevents addressing depression because the client cannot concentrate or devote mental and physical resources to considering and processing the depressive symptoms; however, since the literature suggests that psychological factors such as depression during an acute pain episode can be a risk factor for the individual developing chronic pain, overcoming this barrier may be an important area of future research.

When do music therapists working with individuals experiencing acute pain address depression?

The study suggested that music therapists who work with individuals who will experience an acute pain event address depression prior to the acute pain event. The study also suggested that some music therapists treat depression symptoms when working with individuals currently experiencing acute pain. The interviews expanded on this idea, indicating that music therapists may address depression during an acute pain event if the client is managing his or her pain and if the depression is the client's foremost need. Thus, the study suggests that music therapists addressing depression in clients who are or will be experiencing acute pain will do so prior to the acute pain event or during the acute pain event if appropriate.

How do music therapists working with individuals experiencing acute pain address depression in terms of assessment, treatment goals, and interventions?

As there is no formal music therapy pain assessment or music therapy assessment for psychological factors while an individual experiences pain, the study suggested that music therapists mostly use the individual's presenting emotional state to assess depression in

individuals experiencing acute pain (Allen, 2013). The survey indicated that music therapists may also examine client coping mechanisms and client's psychological history to ascertain if mental health needs should be a priority in the music therapy treatment.

Even with emotional state, coping mechanisms, and client psychological history, assessing depression in individuals experiencing acute pain is a challenge. The interviewees clarified the two main reasons for this challenge. First, people do not understand depression or are not as forthcoming with sharing that they experience it, and second, depression is not as easily observable as other psychological factors such as anxiety. Consequently, depression is difficult to assess in clients, especially if they are experiencing acute pain and have their attention focused on that experience. As Allen (2013) discussed, the music therapy assessment process focuses on what the client wants, needs and desires; as both the short answers and the results from the interviews suggested, most clients want to decrease the perception of pain, not focus on depression.

While depressed mood may be a need area addressed by music therapists when working with individuals with acute pain, four out of the top five results in the survey pertain to anxiety and not depression. The study suggested that other specific aspects of depression besides depressed mood, such as fatigue or loss of energy, feelings of worthlessness, sleep difficulties, and anhedonia, are not addressed in individuals with acute pain. Likewise, the study implied that music therapists utilize treatment goals addressing depression less often than treatment goals addressing anxiety; however, results from the study suggest that depression is more likely to be addressed in individuals prior to the acute pain event rather than during the acute pain event. This further reinforces what the interviewees discussed in

how what the clients desire while they experience acute pain is not discussion of depressive symptoms but management of their pain.

Both interviewees who primarily work with individuals experiencing acute pain said that they use active music therapy interventions to address depression. The short-answer questions of the survey also addressed this, wherein participants described using active experiences such as lyric analysis, improvisation, and songwriting to increase emotional expression and process difficult emotions. Surprisingly, given how most music therapists appear to not address depression during an acute pain experience, active music making, therapeutic song singing, and improvisation were in the top five interventions utilized by participants when working with individuals before experiencing and while experiencing acute pain. As addressing depression prior to or during an individual's acute pain experience is not a commonly-researched topic in the literature, it is not possible to compare these results with results from the literature.

Do music therapists address client anxiety when working with individuals experiencing acute pain?

Results of this study suggest that music therapists working with individuals in acute pain commonly address client anxiety. All participants who work with individuals experiencing acute pain indicated that they address anxiety. Likewise, the interviewees discussed how anxiety tended to be one of the main areas of focus when working with individuals experiencing acute pain. Since the goal of pain treatment is to decrease the perception of pain, and since anxiety can increase the perception of pain, this is consistent with the literature (Chaput-McGovern & Silverman, 2012; Ramthel, 2012; Spintge, 2012).

When do music therapists working with individuals experiencing acute pain address anxiety?

The study suggested that music therapists address anxiety both before an individual experiences acute pain and while an individual experiences acute pain. While some music therapists have the opportunity to work with individuals prior to an acute pain event such as a surgery, the study also suggested that music therapists tend to address anxiety more often while the individual is experiencing acute pain.

The answers of the interviewees reflected this as well. Through the free response portion of the survey, participants indicated that increasing an individual's self-efficacy by teaching techniques to manage the pain the individual will experience is a primary focus of addressing anxiety prior to an acute pain event. This was similar to the concept in the music therapy literature that music therapy can be utilized to teach and rehearse new coping strategies (Bernatzky et al., 2012, Ghetti, 2012; Heiderscheit, 2013). Free responses in the survey also suggested that such techniques can be taught during an acute pain event, but it is easier to teach the skills prior to the acute pain event, when the individual can focus entirely on the skills and not on the pain itself, supporting Heiderscheit's (2013) assertion.

How do music therapists working with individuals experiencing acute pain address anxiety in terms of assessment, treatment goals, and interventions?

As with assessing for depression in individuals experiencing acute pain, there is not a formal music therapy pain assessment or music therapy assessment for psychological factors while an individual experiences pain; however, the survey suggested that music therapists assess the individual's current emotional state, physical indications, and client coping mechanisms at the beginning of treatment; these all relate to an individual's anxiety. Of note

is the fact that responses to both the survey and the interviews implied that since anxiety has more of a physical expression in that it causes tension, it is easier to use physical indications to assess the individual's anxiety level. Participants also indicated observing physical indications throughout the session to determine the effectiveness of the music therapy treatment on anxiety.

Results from the survey indicated that triggers of anxiety and muscle tension were two of the major need areas addressed prior to an acute pain event. Specific treatment areas targeting anxiety in individuals before they experience acute pain included increasing relaxation, increasing positive coping skills, and increasing mindfulness. Treatment goals targeting anxiety during acute pain included decreasing the perception of pain, thereby decreasing the anxiety-provoking stimulus, increasing positive coping skills, and increasing relaxation. Several music therapy studies reinforce the feasibility of reaching these goal areas by suggesting that music therapy can increase relaxation and decrease anxiety in individuals experiencing acute pain (Chaput-McGovern & Silverman, 2012; Madson & Silverman, 2010; Yates & Silverman, 2015).

Results from the short-answer portion of the survey and from the interviewees indicated that receptive music therapy interventions such as receptive music listening to client-preferred music and music-assisted relaxation tend to be commonly selected music therapy interventions to address anxiety. Participants indicated that receptive music therapy interventions such as music-assisted relaxation, teaching coping skills, and teaching pain management techniques, can be used as a means to help the individual in pain increase his or her self-efficacy and self-management of pain. The focus on increasing coping skills and self-efficacy reinforces the music therapy literature concerning the use of music therapy to

teach, practice, and utilize coping strategies (Ghetti, 2012). Furthermore, as one way of decreasing anxiety is to help the individual establish a sense of control, utilizing receptive music listening to client-preferred music as a music therapy intervention further supports the feeling of choice, both described in the short-answer portion of the survey and in the literature (Cepeda, Carr, Lau, & Alvarez, 2006; Mitchell & MacDonald, 2012).

Do music therapists address client depression when working with individuals experiencing chronic pain?

Results of this study suggest that music therapists working with individuals experiencing chronic pain address client depression. Nearly all participants who work with individuals experiencing chronic pain indicated that they address depression. Additionally, all the interviewees discussed how chronic pain tends to have more of an emotional and psychological component than acute pain, thus making depression an essential need area to address. As much of the pain literature supports the assertion that chronic pain has an emotional and psychological component to it, addressing depression is necessary with individuals experiencing chronic pain, and the survey suggested that music therapists are doing so (Barrett, Heller, Stone, & Murase, 2013; Buhrman et al., 2013; Linton & Shaw, 2011; McGillion et al., 2008; Menzies & Kim, 2008; Nes et al., 2013; Takai et al., 2015).

When do music therapists working with individuals experiencing chronic pain address depression?

In the course of analyzing the data, it became apparent that since chronic pain is by its definition long lasting and persistent, the timing of when music therapists address depression in individuals experiencing chronic pain cannot be determined. This contrasts with using music therapy with individuals experiencing acute pain because of the clearly delineated time

frames of pre-acute pain and during acute pain. Pre-chronic pain is acute pain, and as there are no stages to chronic pain, music therapists address depression in individuals experiencing chronic pain when the individual is experiencing chronic pain. The survey was not able to ascertain specificity beyond that.

How do music therapists working with individuals experiencing chronic pain address depression in terms of assessment, treatment goals, and interventions?

Similarly to working with individuals experiencing acute pain, a formal music therapy assessment that assesses either pain or psychological factors does not exist for individuals experiencing chronic pain. In lieu of that, the survey suggested that many music therapists assess the individual's current emotional state prior to treatment. The survey also suggested that some music therapists use physical indications, client coping mechanisms, and client psychological history to assess psychological factors such as anxiety and depression in individuals experiencing chronic pain. Ranked from most to least selected, music therapists indicated in the survey that when assessing individuals with chronic pain, they use client-provided pain rating, current client emotional state, client medical history, physical indications, client coping mechanisms, and client psychological history, three of which may be used to assess for depression. Throughout the session, client-reported pain, physical indications, and physiological indications are used to assess effectiveness of treatment. This is similar to the suggestion that assessment with individuals in pain should include physical, psychosocial, emotional, and spiritual aspects, as well as an emphasis on what the individual desires from treatment (Allen, 2013).

Results from the survey indicated that many music therapists address depressed mood in individuals experiencing chronic pain. Other symptoms of depression including fatigue or

loss of energy, loss of interest or pleasure, aspects of thinking, diminished ability to think or concentrate, and feelings of worthlessness were also among the most commonly-selected need areas addressed when music therapists work with individuals experiencing chronic pain. Additionally, increasing emotional expression, a way to address depressive symptoms, was the second most selected music therapy treatment goal, while music therapists also often selected increasing positive coping skills and elevating mood. Studies conducted by Kenny and Faunce (2004) and by Maddick (2011) addressed similar goal areas.

Results from the short-answer portion of the survey and from the interviews suggested that when addressing depression in individuals experiencing chronic pain, music therapists tend to select active music therapy interventions such as active music making, improvisation, therapeutic song singing, and songwriting. Through active music therapy interventions, clients can experience and process the emotions they feel, including the sadness and hopelessness associated with depression. As depression can be such an influencing factor on the perception of pain and the existential questions in individuals experiencing chronic pain, allowing for expression and understanding of emotions leads not only to better mental health, but potentially better physical health as well. Again, this was similar to the literature in that Kenny and Faunce (2004) facilitated group singing as a way to address depression, Bradt et al. (2016) explored vocal music therapy as a way to increase a caring attitude towards the body, and Maddick (2011) led clients in songwriting to increase their emotional expression.

Do music therapists address client anxiety when working with individuals experiencing chronic pain?

Results of this study suggest that music therapists working with individuals experiencing chronic pain address client anxiety. All participants who work with individuals experiencing chronic pain indicated that they address anxiety. Likewise, both interviewees who work with individuals in chronic pain indicated that they address anxiety since anxiety often makes pain worse. The literature shares this response in that, researchers stated that increasing self-efficacy decreases anxiety and pain in individuals with chronic pain (Colwell, 1997; Czamanski-Cohen et al., 2014).

When do music therapists working with individuals experiencing chronic pain address anxiety?

As with the research question concerning when music therapists address depression in individuals experiencing chronic pain, the timing cannot be determined since during the time before the individual experiences chronic pain, they are experiencing acute pain. Thus, music therapists address anxiety in individuals experiencing chronic pain when the individual is experiencing chronic pain. The survey was not able to ascertain specificity beyond that.

How do music therapists working with individuals experiencing chronic pain address anxiety in terms of assessment, treatment goals, and interventions?

Again, a standardized music therapy assessment to assess pain or anxiety in individuals experiencing chronic pain does not currently exist (Allen, 2013). In terms of examining anxiety specifically, the survey suggested that music therapists use current client emotional state, physical indications of client anxiety, client coping mechanisms, and client psychological history when assessing individuals experiencing chronic pain, similar to

Allen's (2013) suggestions. One of the interviewees discussed the use of a behavioral scale of observations that includes qualitative data to provide more information on client anxiety, which is a clinical scale rather than a standardized assessment. Additionally, throughout the session, the interviewee noted that she uses client-reported pain, physical indications, and physiological indications to assess effectiveness of treatment.

Results from the survey suggested that music therapists address triggers of anxiety and muscle tension when working with individuals experiencing chronic pain, both symptoms and risk factors for more intense pain and anxiety. Participants indicated several specific goals relating to anxiety in individuals experiencing chronic pain including increasing relaxation and increasing positive coping skills. Additionally, survey participants and both interviewees who work with individuals experiencing chronic pain suggested that building client self-efficacy so that the client is able to manage their pain and anxiety effectively and independently was an overarching theme. This theme was supported by the literature that also suggested that a focus when working with individuals experiencing chronic pain should be using music and music therapy to help them increase their feeling of control over their situation through coping skills, thereby decreasing anxiety (Angheluta & Lee, 2011; Bailey, 1986; Colwell, 1997; Czamanski-Cohen et al., 2014; Kenny & Faunce, 2004).

In order to address these areas, music therapists who took the survey and the interviewees who work with individuals experiencing chronic pain reported utilizing receptive music listening to live music and music-assisted relaxation to address anxiety. Both interviewees also discussed how they often record the relaxation that they teach so that the client can continue to utilize the coping skills at home. By harnessing the mind through

mastery of coping skills, the individual in chronic pain is more likely to feel in control and consequently less likely to experience the tension-pain cycle. In addition to better emotional health, this may also mean that the client does not take as many pharmacological analgesics, is not admitted as often to the hospital for pain, and is less likely to develop dependence or addiction. This is similar to the research that suggested that music therapists commonly utilize receptive music therapy interventions, including music-assisted relaxation and guided imagery to music, when working with individuals experiencing chronic pain (Bailey, 1986; Lewandowski, Good, & Draucker, 2005).

How do music therapists perceive the differences between using music therapy with individuals experiencing acute pain and individuals experiencing chronic pain?

The data from the survey, in addition to the interviews, suggests that music therapists conceptualize using music therapy with individuals experiencing acute pain and using music therapy with individuals experiencing chronic pain differently. For individuals about to experience an acute pain event, music therapists focus on building skills for the individual to use when they experience pain. The rationale for this is logical: if the individual feels that they are in control of the pain and that the pain is not unmanageable, they will be less anxious when the acute pain occurs. In turn, this decreased anxiety will mean that the client will demonstrate less body tension, which in turn means that their body will be more relaxed. Consequently, the individual will experience less pain because of the fear-tension-pain cycle.

Increasing the individual's coping skills prior to an acute pain event addresses the both the individual's state anxiety and the individual's trait anxiety. When using music therapy prior to an acute event, the music therapist and the individual have a specific situation for which they are preparing, such as a surgery. Utilizing coping strategies and

relaxation prior to the acute event addresses the state anxiety surrounding the upcoming event; however, teaching the ways to manage pain and fear also addresses the individual's trait anxiety in that it builds the individual's confidence in their ability to handle and manage the stress that will come. As such, this addresses their trait anxiety in that they feel increased confidence to handle stressful situations (Angheluta & Lee, 2011; Bot et al., 2014; Colwell, 1997; Czmanski-Cohen et al., 2014; Kenny & Faunce, 2004)

This is different when music therapists work with individuals currently experiencing acute pain. Pain is a resource-consuming stimulus; it is difficult to concentrate on anything else when experiencing it. Focusing on the pain can make the individual feel powerless to manage it, which increases state anxiety. The anxiety then increases the amount of tension in the body, which can make the body feel more pain. Thus, since pain and anxiety spearhead each other and since the top priority of individuals experiencing acute pain tends to be decreasing the perception of pain, music therapists focus on state anxiety with individuals experiencing acute pain.

In order to induce a state of relaxation and decreased muscle tension that hopefully leads to decreased perception of pain in individuals experiencing acute pain, participants indicated that they tend to use receptive music therapy interventions. Participants implied that they view individuals experiencing acute pain as so focused on their pain in the moment that the individuals do not have the mental or physical resources to spend on active music therapy interventions addressing deeper psychological needs such as depression or trait anxiety. Thus, the study suggests that music therapists conceptualize working with individuals experiencing acute pain as focused on decreasing the perception of pain by

engaged refocus of attention or decreased anxiety through the use of interventions that are more receptive in nature.

This is very much an in-the-moment process, however; it addresses pain perception, the most pressing need of the individual in acute pain, by addressing state anxiety. This is helpful in the moment to decrease pain. Further, individuals in acute pain do not have the mental resources to work through psychological factors such as anxiety or depression. Consequently, individuals in acute pain often do not desire or find the deeper work required when addressing trait anxiety and depression possible. The desire of individuals experiencing acute pain is to feel less pain, and music therapists work towards lowering the individual's perception of pain through lowering of state anxiety (Chaput-McGovern & Silverman, 2012; Gutgsell et al., 2013; Madson & Silverman, 2010; Yates & Silverman, 2015).

The study also suggests that music therapists addressing the deeper emotional and psychological factors with an individual experiencing acute pain is not unheard of, but it is rare. This is because music therapists working with individuals experiencing acute pain, led by their personal experiences working with individuals in pain, regard pain as an attention-consuming stimulus. Logically, the results of the survey and the interviews indicated that when working with individuals experiencing acute pain, music therapists do not tend to focus on depression unless the individual's pain is under control. Only after the mental resources are not being diverted to the pain can the individual work deeper. Since this piece of the work is more emotionally-filled, the survey suggested that music therapists use active music therapy interventions to assist the client in reaching and working through the deeper emotions through active music making.

In this study, most music therapists suggested that the treatment of chronic pain has more significant emotional and psychological components to it than the treatment of acute pain. Participants and interviewees hypothesized that reasons for this may include that individuals with chronic pain have less hope for a meaningful future, that individuals with chronic pain have tried many approaches to alleviating the pain without success, that medical professionals may not believe or be able to provide comfort to the individual with chronic pain, or that the individual has chemical dependency. Additionally, since the psychological and emotional components are so tied together with the individual's perception of pain, solely treating the individual's perception of pain may not be effective because of the psychological confounding variable. Consequently, participants and interviewees suggested utilizing both active music therapy interventions with individuals experiencing chronic pain to address the emotional components of the pain, as well as receptive music therapy interventions to teach the individual skills to increase self-efficacy and coping, suggestions reflected in the literature (Angheluta & Lee, 2011; Bailey, 1986; Bradt, et al., 2016; Maddick, 2011).

Recommendations for Clinical Practice

Health professionals are giving increased attention to how to effectively manage pain without opioid pain medications and without developing chronic pain after an acute pain event (National Institutes of Health Interagency Pain Research Coordinating Committee). As part of this increased focus, health care professionals recognize psychological factors such as depression and anxiety as having an effect on an individual's perception of pain and the development of chronic pain (Elfering, Käser, & Melloh, 2014; Gerrits et al., 2015; Hermesdorf et al., 2016; Kroenke et al., 2011; Larson, Clark, & Eaton, 2004; Linton & Shaw,

2011; Woo, 2010). The results of this study suggest that music therapists address aspects of anxiety and depression when working with individuals in acute pain and individuals with chronic pain. Thus, the recommendation is that music therapists continue to practice with individuals experiencing both acute and chronic pain.

Since depression and anxiety affect the perception of pain and the development of chronic pain, a further recommendation is that music therapists continue to address trait anxiety and depression with individuals prior to the individual experiencing acute pain to increase coping strategies and the individual's self-efficacy (Bernatzky et al., 2012; Bot et al., 2014; Ghetti, 2012; Kehlet et al., 2006; Kwan & Seah, 2013; Macrae, 2001; Voscopoulos & Lema, 2010). One respondent in the survey commented that doing this work prior to the acute pain event occurring means that the individual will have opportunities to practice the skills without the distraction of the pain and therefore increase their efficaciousness in the presence of acute pain, reinforcing music therapy literature suggesting the same concept (Heiderscheit, 2013). Additionally, addressing and working through the individual's deeper psychological aspects decreases the likelihood of chronic pain developing after the acute pain event (Hermesdorf et al., 2016; Larson et al., 2004; Woo, 2010). In the sessions before the acute pain event, the music therapist can assist the individual in addressing trait anxiety and depression, which will then have a positive effect on decreasing the individual's state anxiety after the acute pain event.

If an individual does not have the opportunity to receive music therapy services focused on trait anxiety prior to an acute pain event, the researcher recommends that music therapists address not only an individual's state anxiety concerning the acute pain situation, but also the individual's trait anxiety as well. A respondent in the survey agreed with this

idea, discussing how music therapists working with individuals in pain need to broaden their goal from only attempting to decrease the perception of pain to assisting the individual in increasing their coping strategies and ways of managing pain at home. Again, as anxiety affects an individual's pain outcomes, music therapists should not just focus on decreasing the perception of pain or distracting the client's attention from the pain; assessing for and addressing trait anxiety as needed is an essential component of treatment for pain.

Additionally, the researcher recommends increasing awareness of and comfort with addressing depression when using music therapy with individuals in acute pain (Allen, 2013; American Psychological Association, 2014; Bernatzky, et al., 2012; National Institute of Mental Health, 2014). Several interviewees in the study discussed the difficulty of recognizing depression through its overt physical symptoms. Even so, the literature indicates that depression can have a potent and long-term negative effect on an individual experiencing acute pain. Thus, since depression has fewer overt physical symptoms but is an important psychological factor that can have far-reaching implications, music therapists should continue to explore creative ways to assess for and address depression in individuals experiencing acute pain.

By the time an individual has developed chronic pain, the psychological and physiological aspects of pain have become very intertwined (Linton & Shaw, 2011). In addition to physical and emotional pain, as the interviewees all suggested, individuals with chronic pain also feel hopeless since it seems that no treatment will work or that they are not being taken seriously. Consequently, the researcher recommends that music therapists continue to address psychological components in individuals with chronic pain. The researcher also recommends using music therapy to address the hopelessness of the

individual with chronic pain through an existential lens to help the individual determine what gives their life meaning.

Several interviewees and participants in the study shared their thoughts concerning client consent for and trust in using music therapy services. Sometimes, an individual experiencing pain needs to be convinced by the music therapist to accept services, and afterwards, they indicate that they found it beneficial. Other individuals refuse music therapy interventions because they are in pain. Individuals who believe that music therapy can help them tend to benefit the most, according to an interviewee response. Thus, the researcher recommends that music therapists consider ways to increase buy-in from individuals in pain, whether that includes psychoeducation about why the services work, and music therapists increasing their knowledge of how music therapy interventions work to be able to speak to that confidently, educating and receiving referrals from other health professionals, or something else entirely. The services do not work if the individual does not receive them; likewise, the services do not work if the individual does not believe they will work.

Finally, the researcher suggests that music therapists continue to dynamically adapt their approach based on the needs and preferences of the individual. Both participants to the survey and interviewees commonly shared this sentiment. As each pain is different and is what the individual says it is, so, too, should be the music therapy treatment (McCaffery & Beebe, 1989).

Limitations

There were several limitations to this study. One limitation was the relatively small sample size for the survey due to low response rate from the selected population. Additionally, as a specific total number of music therapists who work with individuals in

pain is not available, it is unclear whether the number of participants is significant. Consequently, the results of the survey cannot be generalized to all board-certified music therapists who work with individuals in pain. Additionally, the survey was only sent to music therapists who are currently board-certified, meaning that professional music therapists who are not registered with CBMT were not invited to participate. The length of the survey may have created a biased sample in that it is possible that participants who were more interested in the use of music therapy with individuals in pain participated more than participants who were less interested.

Another limitation concerned the survey. While the survey was reviewed by members of the thesis committee, it was not standardized and was initially sent to the selected pool with several spelling errors that were then corrected by the researcher. Additionally, due to an error in the survey, one option was omitted from one question and three options were omitted from another question. This resulted in questions that were not parallel. Furthermore, participants were asked to select the interventions they used with individuals experiencing acute pain or individuals experiencing chronic pain without specification of whether the interventions addressed anxiety, depression, or neither. Therefore, simply relying on the survey data, it is unclear which interventions selected address anxiety and which interventions selected address depression. Participants also were invited to "select all that apply" in many questions. While this response indicated all the options that applied, it did not indicate which response was selected most frequently. Increased piloting of the survey could have provided a more valid survey.

Finally, two of the interviewees practice music therapy with individuals in pain in the same city, but at different facilities. This was unintentional; however, due to regional

similarities and differences across the country and the potential effects regional differences may have on music therapy practice, the two interviewees may not be representative of music therapists working with individuals in pain from different regions of the country.

Implications for Future Research

One theme that emerged from this study was a recognition of the importance of psychological factors prior to an acute pain event and while the individual is experiencing chronic pain; however, few music therapists view depression and trait anxiety as areas on which to focus when an individual is experiencing acute pain. Likewise, little to no research exists concerning the use of music therapy to address depression in individuals experiencing acute pain. Since depression is such a risk factor in the development of chronic pain, finding ways to assess and address depression while the client experiences acute pain appears to be an important future area of research.

One way to assess for depression and other psychological factors in individuals experiencing pain could be a standardized music therapy assessment. As the study suggests, music therapists might not focus on depression if it is not an apparent need area, even though depression and anxiety have effects on the development and maintenance of chronic pain. A simple and formal music therapy assessment that includes risk factors for the development and maintenance of chronic pain could be created and standardized to assist with this, and could be used with individuals experiencing pain. Ideally, it would take the guesswork out of assessing for depression, and results from the assessment could provide music therapists rationale and direction for case conceptualization and treatment planning for individuals experiencing pain.

Several participants also recognized that working with individuals prior to an acute pain event helped the individual have better outcomes. Future randomized controlled trials could examine whether using music therapy to address anxiety and depression in individuals prior to experiencing an acute pain event decreases the likelihood of the development of chronic pain. Additionally, using a randomized controlled longitudinal trial, different music therapy interventions, such as the Bonny Method of Guided Imagery and Music, active music making, and music-assisted relaxation, could be compared to determine which provides the most effective prophylactic measure for chronic pain.

Nearly all participants in both the survey and the interviews recognized the importance of individualized music therapy treatment for individuals experiencing pain. Since every person has a unique neurosignature, every person's perception of pain will be different (Melzack, 1999). Thus, it makes sense for music therapy treatment to be different and individualized for every person. However, most research studies examine interventions that are not individualized; care is taken for the treatment to be the same with every client to make sure that the effect demonstrated in the data can be attributed to the treatment and not confounding variables. Considering that each person experiences pain differently and the findings of this study, future research may need to utilize phenomenological or mixed methods methodologies to fully demonstrate the importance of the individualized component of the music therapy treatment for pain.

Finally, researchers may need to do additional studies to clarify the goals for using music therapy to address psychological factors and pain. For example, when music therapists say that their goal area is to "elevate mood," does that have a long-term effect on depressive symptoms, or is it a brief distraction with a short-term effect? Additionally, for

music therapists working with individuals experiencing pain, is the focus of the music therapy treatment to decrease the client's perception of pain, or is it to help the client build coping strategies and self-efficacy? In both of those examples, one answer is shallow and temporary; the other requires deeper psychological work. With the information from this study about client consent and trust for music therapy treatment, it seems that for the more shallow answers, the client may be more likely to consent to the treatment since it is less threatening and the client may be experiencing reluctance for treatment anyway. The deeper answers would require a conscious desire on the part of the client, which may or may not happen. Thus, the field requires further research to determine whether the best practice of using music therapy with individuals experiencing pain is to remain on the less psychologically intense side of goals or to work through the deeper psychological issues that may lead to worse client outcome, how individuals respond to the best practice, and long-range outcomes of both practices.

Conclusion

This study provides some insight into how music therapists work with individuals experiencing acute pain and individuals experiencing chronic pain. It also explores how music therapists address anxiety and depression in individuals experiencing pain. The findings in the study provide data demonstrating that music therapists address trait anxiety and depression before an acute event and while the individual experiences chronic pain, and that some recognize the importance of increasing how and when to address such psychological factors. The reasoning of several participants and the literature suggests that using music therapy to address pain needs to be more than simply refocusing or distracting; it

needs to provide the individual a space for deeper processing of emotional and psychological areas as well as a space to learn and practice coping strategies to be used long-term.

This study is only a small glimpse into implications for using music therapy to address anxiety and depression in individuals experiencing acute pain and individuals experiencing chronic pain. There is a need for future research to determine how to address psychological factors during acute pain and to further investigate using music therapy as a prophylactic for the development of chronic pain.

As the treatment of pain becomes more of a focus for health care providers, nonpharmacological ways to manage pain and address the psychological factors that contribute to increased pain perception and chronic pain development are becoming more important. Music therapy is uniquely able address these need areas in that it can both provide structure for the teaching of coping skills and pain management techniques as well as an effective means for emotional expression and psychological processing. Thus, the potential for using music therapy to address psychological needs of individuals experiencing pain is extensive and full of possibilities.

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Appendices

Appendix A

Pain, Music Therapy, and Psychological Factors Questionnaire

The purpose of this survey is to examine how music therapists address psychological needs in clients with acute pain and clients with chronic pain.

The survey consists of 33 questions and should not take more than 10-15 minutes to complete.

If you have any questions regarding the survey, please contact:
Hannah Lingafelt, MT-BC, Principal Researcher, lingafelthh@appstate.edu, 919-323-0612;
Dr. Christine Leist, Faculty Advisor, leistcp@appstate.edu, 828-262-6663
or the Institutional Review Board at Appalachian State University, irb@appstate.edu

Section 1:
Demographic information

1. What is your gender?
   Choose: Male, Female, Other

2. What is your age?

3. What is your highest level of obtained education in music therapy?
   Choose: Bachelor's Degree, Music Therapy Equivalency, Master's in Music Therapy, Master's in Social Work, Master's in Counseling, Doctorate, Other

4. When did you receive your highest obtained degree in music therapy?

5. Please indicate any other degrees, licensures, certificates, trainings, etc. you have received.

6. How long have you been practicing as an MT-BC?

7. How would you describe your theoretical orientation? If eclectic, please describe.
   Choose: Cognitive-behavioral; existential; psychoanalytic; psychodynamic; person-centered; interpersonal; behavioral; Adlerian; Gestalt; systems/family systems; eclectic (explain); Other: _____

8. In what setting(s) do you currently practice?
   Choose: Medical hospital; Psychiatric hospital; Community mental health center; Private music therapy practice; Nursing home; Hospice; Correctional facility; Halfway house; School; Other: _____

9. I work with:
   Choose: Adults experiencing acute pain, Adults experiencing chronic pain, both, neither

Section 2: Music Therapy and Acute Pain

Acute pain is defined as "an expected physiologic experience to noxious stimuli that can become pathologic, is normally sudden in onset, time limited, and motivates behaviors to avoid actual or potential tissue injuries" (National Institutes of Health Interagency Pain Research Coordinating Committee, 2016).

10. Do you use music therapy with adults experiencing acute pain?
    Choose: Yes, No

11. What kind of music therapy sessions do you use with clients with acute pain?
    Choose: Individual; group; both; other: _____

12. What do you use to assess at the beginning of the music therapy treatment for acute pain?
    Choose: Client-given pain rating; physical indications (explain); physiological indications (explain); client medical history; client psychological history; current client emotional state; client social supports; client spiritual supports; client coping mechanisms; client functional ability; client's previous musical experiences; other: _____

13. Do you use music therapy to address anxiety in clients **before** they experience acute pain?
    Choose: Yes, No.

14. Do you use music therapy to address depressed mood in clients **before** they experience acute pain?
    Choose: Yes, No.

15. Please select any of the following you address in music therapy **prior** to the client experiencing acute pain and explain how you address them.
    Choose: Attitude toward surgery; anticipation of outcomes; aspects of thinking; self-efficacy; triggers of anxiety; restlessness; muscle tension; loss of interest or pleasure; depressed mood; sleep difficulties (insomnia, hypersomnia, or sleep disturbance); fatigue or loss of energy; feelings of worthlessness; psychomotor agitation or retardation; diminished ability to think or concentrate; recurrent thoughts of death; other:_____

16. Please select goals for the client's music therapy treatment **before** they experience acute pain.

    Choose: *Decrease perception of pain; increase client self-efficacy; decrease catastrophic thinking; increase mindfulness; decrease distorted cognitions; modify negative beliefs; increase emotional expression; increase positive coping skills; increase relaxation; increase social support; elevate mood; Other: ___*

17. What kind of interventions do you use with clients **before** they experience acute pain? Explain how.

    Choose: Entrainment; receptive music listening to live client-preferred music; receptive music listening to recorded client-preferred music; lyric analysis; music-assisted relaxation—progressive muscle relaxation; music-assisted relaxation—autogenic training; music-assisted relaxation—guided imagery; music-supported guided imagery; active music making; therapeutic song singing; songwriting; improvisation; movement to music; other: _____

    How are these interventions used?

18. Do you use music therapy to address apprehensive expectation in clients **while** they experience acute pain?

    Choose: Yes, No.

19. Please select goals for the client's music therapy treatment **while** they experience acute pain.

    Choose: *Decrease perception of pain; increase client self-efficacy; decrease catastrophic thinking; increase mindfulness; decrease distorted cognitions; modify negative beliefs; increase emotional expression; increase positive coping skills; increase relaxation; increase social support; elevate mood; Other: ___*

20. What kind of interventions do you use with clients **experiencing** acute pain? Explain how.

    Choose: Entrainment; receptive music listening to live client-preferred music; receptive music listening to recorded client-preferred music; lyric analysis; music-assisted relaxation—progressive muscle relaxation; music-assisted relaxation—autogenic training; music-assisted relaxation—guided imagery; music-supported guided imagery; active music making; therapeutic song singing; songwriting; improvisation; movement to music; other: _____

    How are these interventions used?

21. How is client pain perception assessed during and after music therapy treatment?

    Choose: 1-10 Numeric Pain Rating Scale; Wong-Baker FACES Scale; Visual Analog Scale; Brief Pain Inventory; McGill Pain Questionnaire; physical indications (explain); physiological indications (explain); Other: _____

Section 3: Music Therapy and Chronic Pain

Chronic pain is defined as persistent pain that lasts longer than three to six months and does not serve an evolutionary purpose with levels of pathology that inadequately explain the pain (Committee on Advancing Pain research, Care, and Education, Board on Health Sciences Policy, 2011; Markenson, 1996)

22. Do you use music therapy with individuals experiencing chronic pain?
    Choose: Yes, No

23. What kind of music therapy sessions do you use with clients with chronic pain?
    Choose: Individual; group; both; other: _____

24. What do you use to assess at the beginning of the music therapy treatment?
    Choose: Client-given pain rating; physical indications (explain); physiological indications (explain); client medical history; client psychological history; current client emotional state; client social supports; client spiritual supports; client coping mechanisms; client functional ability; client's previous musical experiences; other: _____

25. Do you use music therapy to address apprehensive expectation in clients **while** they experience chronic pain?
    Choose: Yes, No.

26. Do you use music therapy to address depressed mood in clients **while** they experience chronic pain?
    Choose: Yes, No.

27. Please select any of the following addressed in music therapy **while** the client experiences chronic pain and explain how they are addressed.
    Choose: Attitude toward surgery; anticipation of outcomes; aspects of thinking; self-efficacy; triggers of anxiety; restlessness; muscle tension; loss of interest or pleasure; depressed mood; sleep difficulties (insomnia, hypersomnia, or sleep disturbance); fatigue or loss of energy; feelings of worthlessness; psychomotor agitation or retardation; diminished ability to think or concentrate; recurrent thoughts of death; other

28. Please select goals for the client's music therapy treatment **while** they experience chronic pain.
    Choose: *Decrease perception of pain; increase client self-efficacy; decrease catastrophic thinking; increase emotional expression; increase positive coping skills; increase relaxation; increase social support; elevate mood; Other: ___*

29. If you use music therapy with a client **while** they experience chronic pain, what kind of interventions do you use? Explain how.

    Choose: Entrainment; receptive music listening to live client-preferred music; receptive music listening to recorded client-preferred music; lyric analysis; music-assisted relaxation—progressive muscle relaxation; music-assisted relaxation—autogenic training; music-assisted relaxation—guided imagery; music-supported guided imagery; active music making; therapeutic song singing; songwriting; improvisation; movement to music; other: _____

    How are these interventions used?

30. How is client pain perception assessed during and after music therapy treatment?

    Choose: 1-10 Numeric Pain Rating Scale; Wong-Baker FACES Scale; Visual Analog Scale; Brief Pain Inventory; McGill Pain Questionnaire; physical indications (explain); physiological indications (explain); Other: _____

Section 4: Open Ended Questions

31. What thoughts do you have concerning using music therapy with clients experiencing acute pain?

32. What thoughts do you have concerning using music therapy with clients experiencing chronic pain?

33. If you wish, describe an example of your work with clients in acute pain.

34. If you wish, describe an example of your work with clients in chronic pain.

35. If you are willing to be contacted for an interview about your music therapy work with clients with pain, please indicate your email address and whether you work with clients with acute pain, clients with chronic pain, or both.

Appendix B

The Use of Music Therapy to Address Anxiety and Depression in Clients with Pain Semi-Structured Interview

1. Can you confirm your years of experience and number of years working with individuals in pain?

2. In your practice, do you primarily treat people with acute pain, people with chronic pain, or both?

3. How have you learned about music therapy treatment for individuals with acute/chronic pain?

4. What has informed your understanding and treatment of individuals with acute/chronic pain?

5. When you're first working with someone in acute/chronic pain, what is your clinical decision making process in determining what your approach will be with that client? How do you go about assessment, determining goals, and treatment?

6. Do you address anxiety and depression in clients experiencing acute/chronic pain?

7. How do you address anxiety and depression in clients experiencing acute/chronic pain? How did you learn to do that?

8. At what point in the pain process do you address depression and anxiety?

9. How you do conceive the differences between acute and chronic pain?

10. Is there anything else you would like to add about this topic?

Appendix C

Email/Survey Consent Form

As a music therapist who potentially provides services to adults experiencing acute and/or chronic pain, you are invited to participate in a survey that concerns the mental health component of music therapy pain treatment. This survey is part of my thesis research I am conducting at Appalachian State University. Appalachian State University's Institutional Review Board has determined this study to be exempt from IRB oversight.

Your contact information is being used with permission from the Certification Board for Music Therapists, but the information you provide will remain completely anonymous. Qualtrics, the online program where the survey is located, is a secure site, and it neither stores nor tracks your email address, nor does it attach your email address to your responses. The investigator will have no access to email addresses of those who participate or do not participate in the study, and the investigator will not have the ability to link e-mail addresses to responses. The anonymous data will be included in the investigator's master's thesis, and the study may be submitted for publication and presentation at AMTA conferences.

Your participation in completing this survey is voluntary, and there are no consequences if you decline to participate or decide to discontinue participation at any time. No foreseeable risks are associated with completing this survey, and you will receive no compensation. You will be asked to complete at most 35 questions regarding the use of music therapy with individuals experiencing pain; this process should not take more than 15-20 minutes. If you are willing to participate, please continue to access the online survey. By submitting responses to the survey you are consenting to participate. You can choose to respond to all, some, or none of the items.

Please complete the survey by October 31, 2016.

Questions may be directed to:

Hannah Lingafelt, Principal Investigator, lingafelthh@appstate.edu, (919)323-0612
Christine P. Leist, Faculty Advisor, leistcp@appstate.edu, (828) 262-6663
Or the Institutional Review Board at Appalachian State University, irb@appstate.edu

By continuing to the survey, I acknowledge that I am at least 18 years old, have read the above information, and provide my consent to participate under the terms above.

Thank you for your participation,

Hannah Lingafelt, MT-BC
Principal Investigator
Candidate for Master of Music Therapy degree

Appendix D

Oral Interview Consent Form

I agree to participate as an interviewee in this research project, which concerns the use of music therapy addressing anxiety and depression in clients with acute and/or clients with chronic pain. The interview will take place in a location of my choosing via telephone or Skype for approximately one hour. I understand that my comments will be audio recorded, transcribed, and used for a master's thesis and possible publication by Hannah Lingafelt as partial fulfillment for the Master of Music Therapy program at Appalachian State University. I understand that the audio recordings of my interview may be stored in a password-protected laptop if I sign the authorization below. I understand that there are no foreseeable risks associated with my participation.

I give Hannah Lingafelt ownership of the recordings and transcripts from the interview she conducts with me and understand that the recordings and transcripts will be kept in the investigator's possession in a password-protected laptop. I understand that information or quotations form the transcript will be sent to me electronically for member-checking and review before they will be published. I understand I will not receive compensation for the interview.

I understand that the interview is voluntary and I can choose not to participate. I also understand that I can end the interview at any time without consequence.

If I have questions about this research project, I can call Hannah Lingafelt or Dr. Christine Leist at 828-262-6663 or the Appalachian Institutional Review Board Administrator at 828-262-2692 or through email at irb@appstate.edu. I can also contact Appalachian State University, Office of Research Protections, IRB Administrator, Boone, NC 28608.

Appalachian State University's Institutional Review Board has determined this study to be exempt from IRB oversight.

☐ I request that my name **not be** used in connection with transcripts or publications resulting from this interview

☐ I request that my name **be used** in connection with transcripts or publications resulting from this interview

By signing this form, I acknowledge that I have read this form, have had the opportunity to ask questions about the research and receive satisfactory answers, and want to participate. I understand I can keep a copy for my own records.

Participant's name (Print)	Signature	Date
Investigator's name (Print)	Signature	Date

Appendix E

Email of IRB Approval/Exemption

To: Hannah Lingafelt
School Of Music
CAMPUS EMAIL

From: Monica Molina, IRB Associate Administrator
Date: 9/20/2016
RE: Notice of IRB Exemption

STUDY #: 17-0041
STUDY TITLE: Music Therapy to decrease anxiety and depressed mood in adults with pain: A survey

Exemption Category: (2) Anonymous Educational Tests; Surveys, Interviews or Observations

This study involves minimal risk and meets the exemption category cited above. In accordance with 45 CFR 46.101(b) and University policy and procedures, the research activities described in the study materials are exempt from further IRB review.

All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar
7. Click on the appropriate documents you wish to download

Study Change: Proposed changes to the study require further IRB review when the change involves:

- an external funding source,
- the potential for a conflict of interest,
- a change in location of the research (i.e., country, school system, off site location),
- the contact information for the Principal Investigator,
- the addition of non-Appalachian State University faculty, staff, or students to the research team, or
- the basis for the determination of exemption. Standard Operating Procedure #9 cites examples of changes which affect the basis of the determination of exemption on page 3.

Investigator Responsibilities: All individuals engaged in research with human participants are responsible for compliance with University policies and procedures, and IRB determinations. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records. The PI should review the IRB's list of PI responsibilities.

To Close the Study: When research procedures with human participants are completed, please send the Request for Closure of IRB Review form to irb@appstate.edu.

If you have any questions, please contact the Research Protections Office at (828) 262-2692 (Robin).

Best wishes with your research.

Websites for Information Cited Above

Note: If the link does not work, please copy and paste into your browser, or visit https://researchprotections.appstate.edu/human-subjects.

1. Standard Operating Procedure #9: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/IRB20SOP920Exempt%20Review%20Determination.pdf

2. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI20Responsibilities.pdf

3. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

CC:
Christine Leist, School Of Music

Vita

Hannah Lingafelt was born in Durham, North Carolina, to C. Steven and Patti Lingafelt. After graduating high school, Hannah entered Appalachian State University to study music therapy. She began her music therapy internship at Tallahassee Memorial HealthCare in June 2013 and, upon completion of it in December 2013, she received her undergraduate Bachelor of Music degree in music therapy summa cum laude. Hannah passed her board exam to become a board-certified music therapist (MT-BC) in January 2014. Hannah returned to Appalachian State University for the Master of Music Therapy and Master of Arts in clinical mental health counseling in August 2014. While working on her degree, Hannah supervised pre-internship music therapy students in the music therapy program and worked as a staff music therapist in Appalachian State University's Music Therapy Clinic. Additionally, Hannah began her advanced training in the Bonny Method of Guided Imagery and Music (BMGIM) in January of 2017. Hannah will graduate with dual master's degrees in clinical mental health counseling and music therapy in August 2017.

After graduating from Appalachian State University, Hannah plans to continue practicing body-centered music therapy with a focus on mental health. She also plans on continuing her training in BMGIM. Hannah is a member of the American Music Therapy Association, the Association for Music and Imagery, and the American Counseling Association. She is an inducted member of Pi Kappa Lambda and served as president of the Alpha Sigma Upsilon chapter of Chi Sigma Iota for the 2016-2017 academic year.